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U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF PLANT INDUSTRY—BULLETIN NO. 248.

B. T. GALLOWAY, *Chief of Bureau.*

SEEDS AND PLANTS IMPORTED

DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1911:

INVENTORY No. 28; Nos. 31371 to 31938.

Issued September 10, 1912.

WASHINGTON:
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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Plant Industry,
Office of the Chief,
Washington, D. C., March 16, 1912.

Sir: I have the honor to transmit herewith and to recommend for publication as Bulletin No. 248 of the series of this Bureau the accompanying manuscript, entitled "Seeds and Plants Imported during the Period from July 1 to September 30, 1911: Inventory No. 28; Nos. 31371 to 31938."

This manuscript has been submitted by the Agricultural Explorer in Charge of Foreign Seed and Plant Introduction with a view to publication.

Respectfully,

B. T. Galloway,
Chief of Bureau.

Hon. James Wilson,
Secretary of Agriculture.

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B. P. I.—737.

SEEDS AND PLANTS IMPORTED DURING THE PERIOD FROM JULY 1 TO SEPTEMBER 30, 1911: INVENTORY NO. 28; NOS. 31371 TO 31938.

INTRODUCTORY STATEMENT.

This twenty-eighth inventory of seeds and plants imported contains 20 per cent more material than the inventory covering the same period of last year and includes 668 introductions.

It contains some interesting plants collected by Mr. Frank N. Meyer in Chinese Turkestan during the winter of 1910 and the spring of 1911. These months were spent by Mr. Meyer in exploring the oases of Chinese Turkestan south of the Tien Shan Range and in crossing over this range to Chugutchak, Mongolia. Of the dangers of travel in this country Mr. Meyer himself will probably be given an opportunity to tell in a later publication. Certainly they were great enough to make the material secured of very unusual value.

Part of the collections made by Mr. C. V. Piper during his study of the forage-crop situation in the Philippines is also included. His collections from the Dutch East Indies and British India, where he traveled as an agricultural explorer, will be described in future inventories.

Experimenters living in the Northern States will probably be interested in the collection of winter wheats which Mr. Meyer secured in Chinese Turkestan (Nos. 31780 to 31791); in four varieties of hull-less barley from which the natives of Chinese Turkestan make bread (Nos. 31793 to 31796); in alfalfa varieties from Khotan, Kashgar, and Khanaka, one of which has the ability to grow in cool weather when other sorts have stopped growing (Nos. 31811 to 31815); in a variety of alfalfa from Chugutchak, Mongolia, which is said by the growers there to be much hardier than the Turkestan alfalfa, though giving only two cuttings, whereas the Turkestan gives three, but while one-third of the plants of the Turkestan alfalfa were winterkilled none of the Mongolian variety was injured (No. 31687); in a hardy wild apple found by Mr. Meyer at Kulja, Chinese Turkestan, which may prove of value for breeding purposes (No.

31688); in the oleasters from this same region, which are among the hardiest and generally most useful trees known for dry, cold countries (No. 31822); in some winter radishes for midsummer planting (No. 31697); and in four Mongolian wild roses with characters which may make them valuable for breeding purposes (Nos. 31692 to 31695).

Experimenters in the Gulf States will be interested to learn of the introduction from the Hawaiian Islands of a species of cotton entirely new to this country (No. 31680). This is a good-sized tree with large scarlet flowers, and seeds with a remarkable short brown lint on them. Only a few trees are in existence and these will be carefully guarded to prevent this very striking relative of our cotton plant from becoming extinct and forever precluding the possibility of hybrids being made between it and the cultivated species.

The attention of the same experimenters in the South is called to a collection of grasses made by the New Zealand Government for the purpose of regrassing the denuded areas of South Island (Nos. 31489 to 31509); to a collection of apple varieties resistant in the mild climate of New Zealand to the woolly aphis (Nos. 31511 to 31536); to a new chance seedling plum of the Satsuma type (No. 31652) and a new variety of subtropical apple from Natal (No. 31653); to seven distinct varieties of the New Zealand flax which are reported to be superior fiber producers (Nos. 31884 to 31890); to six varieties of the sweet potato which have been either developed by the Maoris of New Zealand or brought, according to their tradition, from the Hawaiian Islands by their ancestors (Nos. 31908 to 31913); and to nine varieties of rice from Chinese Turkestan (Nos. 31823 to 31832), one of which is said to ripen its grain 10 weeks after sowing.

To those whose experimental gardens lie south of the zone of severe freezes some of the following introductions may appeal, for, although many of them are reported to be strictly tropical, their ability to grow farther north than the latitude in which they were discovered remains to be determined.

The success of the Carissa as a hedge and fruit plant has made it seem advisable to get other species of the same genus from Natal (Nos. 31840 and 31841). The awakening of subtropical horticulturists to the value of the avocado has led to the introduction of the best varieties of "paltas" from Quillota, Chile (No. 31631), and five different forms from various localities in Costa Rica and Guatemala (Nos. 31375, 31376, 31478, 31614, and 31616), while the introduction of the new species *Persea pittieri* (No. 31928) should interest particularly those who have begun to improve this new fruit plant by breeding and selection.

Since the days of Capt. Cook the seedless breadfruits of Tahiti have been famous, but the culture of these seedless forms, which are

baked and eaten as a vegetable, seems not to have spread very widely through the Tropics. The introduction of cuttings (No. 31378) may therefore stimulate an interest in this tree, which has so much of tropical romance connected with it.

Ten varieties of tropical yams (*Dioscorea* spp., Nos. 31914 to 31923) from Port Moresby, New Guinea, may add some valuable strains to the collections of West Indian forms; two interesting mangos from Tahiti (Nos. 31379 and 31380) are added to the hundred or so varieties which compose the Florida collections.

Mr. Piper calls attention to the uses of the Nipa palm as a plant for trial in the brackish swamps of southern Florida (No. 31556) and reports on the quality of the fruit of the wampee from Canton, China (No. 31730), which, while it is one of the commonest fruits of South China, is little known in Florida or Porto Rico. The cajuput tree of New South Wales (No. 31736) has made a remarkable growth on the shores of Florida and promises to be a most valuable tree for that region, and the further introduction of seed will be of interest to those who are studying the forest problems of that State.

The lacquer tree of China and Japan is a relative of our poison ivy and is quite as poisonous to some people, but the remarkable character of the sap, which is different from the paint oils or varnishes in use in this country, makes its culture worthy of the consideration of chemists. The drying process is not a simple oxidation phenomenon, but it depends on the action of enzymes upon albuminoids in the presence of an organic acid, and, as the product, lacquer, is one of the most durable and perfect wood coatings known, it would seem worth while to find ways by which it can be handled by painters. The introduction of the crude lacquer and seeds of the lacquer tree (No. 31639) are for the purpose of interesting the paint and varnish makers of this country.

The extensive employment in India of the juice of a certain tropical persimmon, when mixed with charcoal, as a coating for the planks of boats has made it seem worth while to add this species to our collection of Diospyros (No. 31488).

To those who wish to test new forms in their gardens, the narras from Walfisch Bay, a dune-forming, thorny cucurbitaceous plant (No. 31401) which produces fruits upon which the Hottentots live and thick nutlike seeds which are used in South Africa as a substitute for almonds, will perhaps be of interest; or one of Mr. Piper's introductions from the Philippines, a vine with beautiful globose smooth red fruits as large as an orange (No. 31588); or the pacuri of Paraguay, a plant as frost resistant as the orange, which bears edible fruit (No. 31872).

As heretofore, the manuscript for this inventory has been prepared by Miss Mary A. Austin, and the botanical determinations have been made and the notes on geographic distribution arranged by Mr. H. C. Skeels, under the supervision of Mr. Frederick V. Coville, of the Office of Taxonomic and Range Investigations. The general supervision of this inventory, as of all the publications of this office, has been in the hands of Mr. Stephen C. Stuntz.

DAVID FAIRCHILD,
Agricultural Explorer in Charge.

OFFICE OF FOREIGN SEED AND PLANT INTRODUCTION,
Washington, D. C., February 19, 1912.

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INVENTORY.

31371. XANTHOSOMA sp. **Yautia.**

From Monte Cristi, Dominican Republic. Procured by Mr. Frederick L. Lewton, of the Bureau of Plant Industry. Received July 1, 1911.

"These tubers were obtained by Mr. Lewton on the market under the name of yautia. They are oblong in form, one specimen being 6 inches in length and 2¼ inches in greatest diameter, with a weight of 10 ounces. The sprouts are pink or reddish. The flesh is white and nonacrid; when cooked it becomes slightly purplish and is moderately firm. The flavor is rather inferior." (*R. A. Young.*)

31372. XANTHOSOMA sp. **Yautia.**

From Port au Prince, Haiti. Procured by Mr. Frederick L. Lewton, of the Bureau of Plant Industry. Received July 1, 1911.

"The tubers of this variety were obtained on the market under the name of *Malanga* by Mr. Lewton. They are roundish in general form, some specimens being about 2½ by 3 inches in size and weighing 5 to 6 ounces. The sprouts are reddish in color. The flesh is acrid when raw, but the acridity is destroyed by boiling for 35 or 40 minutes. The flesh is very firm when cooked and is of fair flavor." (*R. A. Young.*)

31373. IPOMOEA BATATAS L. **Sweet potato.**

From Broadwood, New Zealand. Presented by Mr. George Harris, at the request of Mr. T. W. Adams. Received at the Plant Introduction Garden, Chico, Cal., June 28, 1911.

"*Kumaras.*"

31374. INOCARPUS EDULIS Forst. **Tahiti-chestnut.**

From Tahiti, Society Islands. Procured by Mr. North Winship, American consul. Received July 1, 1911.

"O'Tahiti-chestnuts come from what is considered the best tree on this island. The nut should be planted about 4 or 5 inches deep, good loamy soil preferred, in the place where the tree is desired. It is of slow growth, but makes a beautiful tree, growing to great size and yielding abundantly. Keep the seed and the young plant damp, but not wet." (*Winship.*)

"These seeds are much prized by the natives as food, being eaten boiled or roasted. They are said to be less palatable than the chestnut." (*Fairchild.*)

31375 and 31376. PERSEA AMERICANA Miller. **Avocado.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received July 3, 1911.

Seeds of the following:

31375. "Broad oval."

31376. "Long, but without neck or stem."

"These are seeds of large, very thick-fleshed and very good varieties. They are about the best that come to the market. Plain green." (*Wercklé.*)

31377. ENTELEA ARBORESCENS R. Br. **Whau.**

From Tauranga, New Zealand. Presented by the Tauranga Fruit-Testing Station, Department of Agriculture, New Zealand. Received July 3, 1911.

See No. 30833 for description.

31378. ARTOCARPUS COMMUNIS Forst. **Breadfruit.**

From Tahiti, Society Islands. Presented by Mr. North Winship, American consul. Received at the Plant Introduction Garden, Chico, Cal., June 22, 1911. Forwarded to Washington, D. C., and received June 27, 1911. Numbered July 6, 1911.

"These cuttings should be planted in loamy soil, the top of the stalk being closed to prevent insects from entering, and the plant should be protected from the midday sun until it shows signs of life. This is a very fine variety of the Tahiti breadfruit, being about the size of a grapefruit and without seed." (*Winship.*)

31379 and 31380. MANGIFERA INDICA L. **Mango.**

From Tahiti, Society Islands. Procured by Mr. North Winship, American consul. Received at the Plant Introduction Garden, Chico, Cal., June 22, 1911. Numbered July 6, 1911.

Plants of the following; quoted notes by Mr. Winship:

31379. "*Superba* Hook. This gives a fine large fruit, heavy and almost round; its color is yellowish golden."

31380. "*Altissima* Blanco. This is practically the same as the preceding, possibly longer and more pointed at the bottom; its color is pink or red, sometimes with a violet hue."

"Both of these fruits are less fibrous than the other mangos found here, and are very luscious. These trees begin to bear with the commencement of the rainy season. It is thought that both of these varieties came originally from India."

These two were sent in as *Mangifera superba* and *M. altissima*, respectively, though they are now considered merely as forms of *M. indica*.

31381. PERSEA AMERICANA Miller. **Avocado.**

Secured on the market at Laredo, Tex., by Dr. David Griffiths, of the Bureau of Plant Industry, June, 1911. Received July 5, 1911.

"A Mexican avocado, the only one of the kind found. Brownish black in color. The outer skin hard, rather brittle, and easily peeled off from the edible flesh. Flavor good, flesh firm." (*Griffiths.*)

31383. ROLLINIA sp.

From Piracicaba, Brazil. Presented by Mr. Clinton D. Smith, Fazenda Modelo do Estado de São Paulo. Received July 7, 1911.

"Variety *Cabeça de Negro*. The natives call this fruit *araticu*." (*Smith.*)

31384 to 31388.

From the vicinity of Chungking, China. Presented by Mr. Albert W. Pontius, American consul. Received June 27, 1911.

Seeds of the following; quoted notes by Mr. Pontius:

31384. HORDEUM VULGARE L. **Barley.**

Bearded.

31385. HORDEUM VULGARE var. **Barley.**

"Black. Considered superior. Not raised extensively."

31384 to 31388—Continued.

31386. HORDEUM VULGARE var. **Barley.**

Beardless.

"All three of these varieties are planted in the beginning of November, the crop ripening in early May following. They are chiefly used in the manufacture of wine spirits, very little being used as human or animal food."

31387. BRASSICA NAPUS L. **Rape.**

"Black. This variety grows to a height of about 3 feet and ripens in April or May. The oil obtained from the seed is dark in color."

31388. BRASSICA JUNCEA (L.) Cass.

"Yellow. This variety grows to a height of about 5 feet and ripens in April or May. The oil extracted from the seed is of a light color."

31389 and 31390. FEIJOA SELLOWIANA Berg.

From California. Presented by Mr. H. Hehre, Los Angeles, Cal., who procured them from the garden of Mrs. Ingraham. Received November, 1910. Numbered for convenience in recording distribution July 10, 1911.

Plants grown from seed received on the foregoing date:

31389. "Variety *Hehrei*. This large, long fruit was originated by me years ago by selection and crossbreeding. It gets to be 3 inches in length by 2 inches in diameter, has smooth skin, and is of good flavor." (*Hehre.*)

31390. A short, round variety.

See Nos. 26120 and 26121 for general notes on this fruit.

31391. PINUS ELDARICA Medw. **Pine.**

From Tiflis, Caucasus, Russia. Presented by Mr. A. Rolloff, director, Botanic Garden. Received July 10, 1911.

Distribution.—On the rocky slopes of the valleys of the streams in the dry, central region of the Trans-Caucasian provinces of southeastern Russia.

31392. ANACARDIUM OCCIDENTALE L. **Cashew.**

From Maulmain, Lower Burma, India. Procured from the Deputy Commissioner at Maulmain, by Mr. M. K. Moorhead, American consul, Rangoon, Burma, at the request of the consul general at Calcutta. Received July 10, 1911.

"Cashew nuts are the kidney-shaped nuts of the *Anacardium occidentale*, known in Burmese as *Thiho-thayet-si* (seeds of the *Thio-thayet*, 'Ceylon mango'). The tree, of which there is only one variety in Burma, was originally introduced from Brazil, where it is known as *Acaju* (hence the Portuguese *Cajew* and the English *Cashew*). It is planted commonly on roadsides and in fruit gardens in Maulmain, Amherst district, and in Tavoy and Mergui districts. It has run wild in the sandy coast forests of western India, chiefly on the borders of the backwaters of Travancore. It is propagated in India and Burma by sowing the nuts and not yet by grafting or other methods, though these admit of being applied to it." (*Mr. J. Mackenna, Director of Agriculture, Burma.*)

31393. CEIBA PENTANDRA (L.) Gaertner. **Kapok.**

From Buitenzorg, Java. Presented by the Director of Agriculture. Received July 11, 1911.

"A high tree, 20 to 30 meters [65 to 100 ft.], with spreading horizontal branches. The cotton covering the seeds is used in making beds and pillows. The wood is white and soft, but in Porto Rico is considered desirable for minor building purposes, such

as inside partitions. The leaves are palmately divided, like those of the horse-chestnut, and it is sometimes called the 'five leaves silk cotton' to distinguish it from Ochroma and others which produce a silky fiber. The trunks of young trees of this species are beset with large, conical spines, but in age these fall away and are to be found only on the branches. The trunk is further transformed by the growth of prominent wings or buttresses, sometimes 2 feet (0.6 meter) wide, while but a few inches thick. In west Africa, where this tree is larger and more luxuriant, pieces of these supporting wings are sawed out and used as doors of native houses. The fiber surrounding the seeds of this and related species is the 'Kapok' of commerce, and is exported in considerable quantities from the west coast of Africa." (*Cook and Collins. Economic Plants of Porto Rico, 1903, p. 111.*)

" 'Kapok' has come into use very largely in certain European countries in recent years, notably in Germany and Holland, as a material for stuffing cushions, pillows, chairs, bedding, and similar articles. For such purposes its nonhygroscopic character and its softness and resiliency render it peculiarly suitable. It is also stated to be less absorbent and less liable to harbor insect parasites than the materials generally employed in upholstery, and, according to the authorities of the Pasteur Institute in Paris, it can be sterilized by heat at least three times without being seriously damaged, whereas feathers and other upholstery materials do not usually survive this treatment more than twice." (*Indian Vegetable Flosses or "Silk Cottons." Bulletin of the Imperial Institute, vol. 3, 1905, p. 223.*)

Distribution.—A tall tree found in the forests throughout the warmer parts of India and Ceylon; also in tropical Africa, the West Indies, and South America.

31394. CRYPTOMERIA JAPONICA (L. f.) D. Don.

From Yokohama, Japan. Purchased from the Yokohama Nursery Co. Received July 8, 1911.

See No. 2922 for description.

31395 and 31396.

From Foochow, China. Presented by Mr. T. M. Wilkinson. Received July 5, 1911.

Seeds of the following; quoted notes by Mr. Wilkinson:

31395. MEDICAGO LUPULINA L. **Black medick.**

"A clover with low-growing stems, inclined to lie along the ground and take root at joints. Starts in new places like white clover. Leaf about the size of white clover. Blossom yellow; seed grows on stem something like alfalfa instead of in head like red or white clover. It may be well to experiment with it carefully, for if it is not found to be of value as a forage or pasture plant it may prove to be as much of a pest as the sweet clover is in some of the States."

31396. TRITICUM AESTIVUM L. **Wheat.**

"This is planted here the last of November and December; it grows during the rainy season and ripens during the humid spring season. Seems to be rust-proof and does not blight easily. Straw quite stiff and strong. May prove to be a valuable variety of winter wheat for the Southern States."

31397. CAPSICUM sp. **Red pepper.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received July 12, 1911.

"Called in Guarany *Kucii*. A very small and very strong pepper, a good rival for, if not stronger than, the tabasco pepper. Found growing wild in the mountains of Paraguay, but I know nothing of the plant or habit of its growth, as the seeds were procured for me by Indians near the yerbales of Alta Parana." (*Mead.*)

31398 to 31400. NICOTIANA TABACUM L. **Tobacco.**

From the Isthmus of Tehuantepec, Mexico. Presented by Mr. Lewis W. Haskell, American consul, Salina Cruz, Mexico. Received July 12, 1911.

Seeds of the following; quoted notes by Mr. Haskell:

31398. "I am told that this sample will show three classes:

"(1) *Criollo*, which grows 3 feet or more in height, with about 30 leaves to the flower. From 20 to 24 would be left after topping. Length of leaf 40 to 60 centimeters and a proportionate width, coming to a point. Coarse vein, dark color, and poor quality.

"(2) *Criollo*, which grows about the same size and shape as the above but of a great deal finer quality. Small vein, fine leaf, light weight. Color, colorado or colorado maduro. This is the class largely used in Valle Nacional and San Andres Tuxtla and is much esteemed for its size of leaf and its softness or fineness. It is mixed with the first mentioned to 'add weight.'

"(3) *Cubano* or *Habanero*, which grows somewhat larger than the above, but the leaves are more widely separated and there are but from 14 to 18 left at topping. Leaves almost round; color colorado claro or claro. Is of very fine texture and light weight."

31399. "This came from Acayucan and is the ordinary kind raised there. Acayucan is located on the Isthmus of Tehuantepec, and is in the State of Vera Cruz."

31400. "As to this variety, the natives hereabouts do not distinguish, so all I can say for it is that it is tobacco seed. It comes from the vicinity of Modias Aguas on the Tehuantepec National Railway, which is situated on the Gulf slope of the Isthmus. No tobacco is grown on this, the Salina Cruz side of the Isthmus."

31401. ACANTHOSICYOS HORRIDA Welw. **Narras.**

From Walfisch Bay, Africa. Presented by Mr. Richard Hörnig, Farm Sachsen, Tsumeb, German Southwest Africa. Received July 8, 1911.

"A plant belonging to the same family as the squash, which it somewhat resembles. It is an important dune former, and continues to grow with the increasing height of the dune, so that its younger shoots remain at the surface, forming a dense, thorny shrub, while the root system penetrates to a considerable depth, tapping the underground water and securing such a supply that drops exude and fall from the cut ends of assimilating stems.

"Old stems buried in the accumulating sand become as stout as one's arm and ensheathed in a thick layer of corrugated cork, obviously serving in part as water storers. The plant is unisexual and each dune apparently contains a single individual, for the two sexes are never found together.

"Flowering commences in November and by the middle of February the female plants produce ripe fruits, which are borne in great profusion, and for about four months in the year render the Hottentots independent of other sources of food and, to a large extent, of water also. The fruits are spheroidal in shape and about 9 inches in diameter. The juicy yellow flesh is much relished by the natives, who consume large quantities of it while fresh and lay by a store for winter use in the form of hard, flat cakes obtained by evaporation. Its food value is attested by their fat and sleek appearance during the narras season.

"The faculty of enjoying the juice evidently has to be acquired, for it has a sweet, sickly flavor and contains an acid principle very irritating to the tongue and palate of those unaccustomed to it; it is said that at the end of the narras season the lips of even the habitual consumers are swollen and inflamed. The seeds, which somewhat

resemble those of the squash, are very nutritious and were formerly exported to Cape Town under the name of 'butternuts,' where they found a market among the native population and were also used by Europeans as a substitute for sweet almonds." (*Pearson, Notes on a Journey from Walfish Bay to Windhuk, Kew Bulletin of Miscellaneous Information, No. 9, 1907, p. 342, figs. 1 and 2.*)

Distribution.—In the desert regions near the west coast of Africa from the vicinity of Mossamedes southward to Namaqualand.

31402. CANNA sp. **Canna.**

From the forests around El Boquete, Chiriqui, Panama, at an altitude of 3,250 to 4,250 feet. Presented by Mr. H. Pittier, collector, Smithsonian Biological Survey of the Panama Canal Zone. Received July 13, 1911.

31403. NICOTIANA TABACUM L. **Tobacco.**

From Jocoto, Guatemala. Presented by Mrs. Lucie Potts, Livingston, Guatemala. Received July 12, 1911.

31404. CASTANEA CRENATA Sieb. and Zucc. **Chestnut.**

From Japan. Procured by Mr. Thomas Sammons, American consul general, Yokohama, Japan, who secured them through the Agricultural Experimental Farm at Aomori, Mr. H. Iwaya, of the village of Shinjomura, Higashitsuruga-Gori, near Aomori, having gathered the same by special request. Received December 27, 1910. Numbered for convenience in recording distribution July 14, 1911.

Aomori.

31405. CRYPTOCARYA RUBRA (Mol.) Skeels. **Peumo.**

From the province of Valparaiso, Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile. Received June 22, 1911.

See Nos. 23897, 24310, and 27904 to 27924 for previous introductions.

31406 to 31409. CITRUS spp.

From Buitenzorg, Java. Presented by Mr. H. Wigman, jr., assistant director, Botanical Garden. Received July 10, 1911.

Seeds of the following; native names quoted:

31406. CITRUS sp.
"*Djeroek tjina konde.*"

31407. CITRUS DECUMANA (L.) Murr. **Pomelo.**
"*Djeroek delima.*"

31408. CITRUS DECUMANA (L.) Murr. **Pomelo.**
"*Djeroek pandan.*"

31409. CITRUS NOBILIS Lour.

31410. CASTILLA ELASTICA Cerv. **Central American rubber.**

From Tula, Vera Cruz, Mexico. Presented by Mr. A. D. Patchen. Received July 15, 1911.

Introduced in order to encourage the growing of the various rubber trees in Porto Rico, Hawaii, and the Canal Zone.

31411 to 31464. SOLANUM TUBEROSUM L. **Potato.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, June 22, 1911.

Tubers.

31465. MEDICAGO HISPIDA APICULATA (Willd.) Urban.

From Jeolikote, United Provinces, India. Presented by Mr. Norman Gill, superintendent, Kumaon Government Gardens, Douglas Dale, at the request of Rev. N. L. Rockey, Gonda, United Provinces. Received July 14, 1911.

31466. CHRYSANTHEMUM CINERARIAEFOLIUM (Trev.) Vis. **Chrysanthemum.**

From Erfurt, Germany. Purchased from Haage & Schmidt. Received July 10, 1911.

Introduced for the work of the Office of Drug-Plant Investigations in growing in the United States the various species of this genus which produce the pyrethrum insect powder.

31467. MEDICAGO SATIVA L. **Alfalfa.**

From Quetta, India. Secured by Mr. F. Booth Tucker, Salvation Army, Simla, India, from Mr. G. H. Frost, subconductor, Military Farm, Quetta. Received July 10, 1911.

31468. MAURITIA SETIGERA Griseb. and Wendl. **Morichy.**

From La Brea, Trinidad, British West Indies. Presented by Mr. H. Caracciolo, St. Joseph Nurseries. Received July 19, 1911.

"A handsome palm growing about the asphalt beds of La Brea. The seeds ripen in May and could readily be gathered, as the palm is abundant locally." (*Oglesby Paul.*)

See No. 31326 for distribution of this species.

31469. FICUS PSEUDO-CARICA Miquel. **Fig.**

From Eritrea, East Africa. Presented by Prof. T. Batorate, director, Colonial Agricultural Experiment Station, Asmara, through Mr. Walter T. Swingle. Received July 19, 1911.

"A native fig introduced for use in the fig-breeding work of the Office of Crop Physiology and Breeding Investigations. This species occurs commonly in a wild state in Eritrea and Abyssinia and bears small but edible fruits. We already have it in California and it promises to be important in supplying early Blastophaga with pollen to caprify the spring crop of figs." (*W. T. Swingle.*)

31470 to 31473.

From Honduras. Presented by Dr. R. Fritzgartner, Tegucigalpa. Received July 19, 1911.

Seeds of the following; quoted notes by Dr. Fritzgartner:

31470. CASIMIROA SAPOTA Oerst. **Matasano, or white sapote.**

31471 to 31473. NICOTIANA TABACUM L. **Tobacco.**

31471. "From Chimbo, 3,900 feet altitude."

31472. "From Santa Lucia, 4,800 feet altitude."

31473. "From Aurora, 5,000 feet altitude."

31474 and 31475. NICOTIANA TABACUM L. **Tobacco.**

From Cuba. Presented by Dr. E. F. Cabada, Cienfuegos. Received July 21, 1911.

Seeds of the following:

31474. "*Vuelta Abajo.*" From the district immediately west of the city of Pinar del Rio, province of the same name.

31475. "*Remedios.*" From the district surrounding the town of this name, province of Santa Clara.

31476. BRASSICA OLERACEA CAPITATA L. **Cabbage.**

From China. Brought in by Mr. G. Weidman Groff, of the Canton Christian College, July 22, 1911.

"*Wong nga paak.* An excellent Chinese cabbage with very long head, and when bleached like celery, of excellent flavor." (*Groff.*)

31477. MANGIFERA INDICA L. **Mango.**

From Piracicaba, Brazil. Presented by Mr. Clinton D. Smith, Escola Agricola Practica, Luiz de Queiroz. Received July 26, 1911.

"Grafts from our best tree. This variety is the *Espada* and is less stringy than the others, also has a larger proportion of pulp to pit." (*Smith.*)

31478 to 31481.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé. Received July 17, 1911.

Seeds of the following:

31478. PERSEA AMERICANA Miller. **Avocado.**

"*Palta* No. 1. Fruit large (390 grams [13¾ oz.]), intense green, shortly pyriform-obovate; thick meat; highest quality. Weight of seed and skin 130 grams [4½ oz.]; meat alone 260 grams [9 oz.]. From Esparta, 300 to 600 feet above sea level." (*Wercklé.*)

31479 and **31480.** LUCUMA spp. **Sapote.**

31479. "Seed received as a very fine variety. I did not see the fruit, but know that it is *very* good. It is long and large despite the small seed; gray in color." (*Wercklé.*)

31480. "A splendid long sapote. Weighed about 1 pound: peculiar shape; very highly prized." (*Wercklé.*)

"A tree 30 to 40 feet high, with fulvous or gray branches, and long obovate leaves. The cream-colored silky flowers are borne in clusters on the stem. Fruit about 6 inches long, with reddish pulp, containing one or more polished seeds. The pulp is sweet and resembles in taste a luscious pear. It is made into a marmalade, which is said to be not unlike good apple preserve." (*Macmillan, Handbook of Tropical Gardening, p. 152.*)

31481. PERSEA AMERICANA Miller. **Avocado.**

31482. PHYTOLACCA DIOICA L. **Ombú.**

From Buenos Aires, Argentina. Presented by Mr. Joseph E. Wing, agent of the Tariff Board. Received July 26, 1911.

"This tree does not withstand much frost. It is the common tree of the plains of Argentina and is seen making a dense green mound of verdure in the very dry soils, green during the worst droughts. I have seen them fully 12 feet in diameter; they

make extraordinarily rapid growth, and when cut down, immediately spring into life again, but do not sucker, the growth coming from the trunk. It is a tree much prized for growing near the home of the colonist or estanciero of the plains of Argentina." (*Wing.*)

31483. LINUM USITATISSIMUM L. **Flax.**

From Hoshungabad, Central Provinces, British India. Presented by Mr. A. Howard, Quetta, British India, at the request of Mr. J. D. Shanahan, formerly of the Bureau of Plant Industry. Received July 26, 1911.

"As regards the oil-yielding capacity of this variety, I understand it is better than the country linseed, but I believe the yield of seed is less. It may, however, be of use in breeding. It is white seeded." (*Howard.*)

This form was secured at the request of this Office, as it is reported that the Indian white-seeded variety yields 2 per cent more oil than the ordinary dark linseed.

31484. FEVILLEA CORDIFOLIA L. **Cabalonga.**

From Costa Rica. Brought in by Mr. José C. Zeledon, San Jose, Costa Rica, July 22, 1911.

"A vine suitable for covering trellises in hot countries, bears a fruit the size of an orange, is an antidote for snake bites, and would grow in Florida." (*Zeledon.*)

"The sequa or cacoon antidote of Jamaica, where it is a common plant in shady woods, climbing to a great height up the trunks of trees. The fruits are 4 to 5 inches in diameter and contain from 12 to 15 large flat seeds which possess purgative and emetic properties and have an intensely bitter taste. In Jamaica the negroes employ them as a remedy in a variety of diseases and consider them to be an antidote against the effects of poison. They also obtain a large quantity of semisolid fatty oil, which is liberated by pressing and boiling them in water." (*Lindley, Treasury of Botany, pp. 490–491.*)

Distribution.—The West Indian islands and in northern South America, extending from Colombia and Peru southward to Chile.

31485 to 31487. ERIOBOTRYA JAPONICA (Thunb.) Lindl. **Loquat.**

From Rome, Italy. Presented by Mr. G. Eisen, San Francisco, Cal. Received July 27, 1911.

Seeds of the following; quoted notes by Mr. Eisen:

31485. "Fruit large, yellow, 2½ inches in diameter."

31486. "Fruit large, orange, 2½ inches in diameter."

31487. "Fruit pear shaped, 2 inches in diameter."

31488. DIOSPYROS PEREGRINA (Gaertn.) Gurke.

From Sibpur, near Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur. Received July 24, 1911.

"A dense evergreen tree found throughout the greater part of India in shady, wet places and near streams. It is frequently cultivated both for ornament and for its large, red, velvety fruits. The fruit is beaten in a large mortar and the juice expressed. This is boiled, mixed with powdered charcoal, and applied once a year to the outside of the planks of boats. The half-ripe fruits are pounded in a mortar and then kept six or seven days in water until they have decomposed. A gummy solution results, which is poured off. This brownish liquid is used in dyeing and tanning." (*Watt, Commercial Products of India, p. 498.*)

31489 to 31509.

From New Zealand. Presented by Mr. A. H. Cockayne, biologist, Department of Agriculture, Commerce, and Tourists, Wellington, New Zealand. Received July 27, 1911.

"These seeds were collected primarily in connection with the regrassing of denuded areas." (*Cockayne.*)

31489. AGROPYRON SCABRUM (R. Br.) Beauv.

Distribution.—Throughout the islands of New Zealand from sea level up to an elevation of 4,500 feet; also in Australia from Queensland to West Australia and Tasmania.

31490. AGROSTIS DYERI Petrie.

"This usually constitutes a large proportion of the subalpine pastures in elevated districts in both islands." (*Cheeseman, Manual of the New Zealand Flora, 1906, p. 865.*)

Distribution.—Mountainous districts at an elevation of 1,000 to 5,000 feet in the islands of New Zealand.

31491. AGROSTIS sp.

The seeds of this grass were received under the name *Agrostis tenella,* which was given to the species in 1889 by Petrie (Transactions of the New Zealand Institute, vol. 22, p. 442). However, in 1800, Hoffmann (Deutschlands Flora, ed. 2, vol. 1, p. 36) had published the name *Agrostis tenella* for a German form of *Agrostis alba,* thus invalidating the use of the same name for the New Zealand grass. As this species has apparently never been given any other name, it seems best to list the material at hand as *Agrostis* sp.

31492. TRIODIA PUMILA (Kirk) Hackel.

Distribution.—Mountainous districts of South Island in New Zealand at an altitude of 2,000 to 5,000 feet.

31493. DANTHONIA BUCHANANI Hook. f.

Distribution.—In the lake region of the South Island of New Zealand.

31494. DANTHONIA CUNNINGHAMII Hook. f.

Distribution.—A handsome grass, often 5 feet high, growing in the islands of New Zealand, ascending to an elevation of 3,500 feet.

31495. DANTHONIA NUDA Hook. f.

Distribution.—On the mountain slopes near the eastern coast of North Island, and in dry places among the mountains on the South Island of New Zealand.

31496. DANTHONIA PILOSA R. Brown.

Distribution.—The provinces of West Australia, Queensland, and New South Wales in Australia, and in Tasmania and the islands of New Zealand.

31497. DANTHONIA RIGIDA Raoul.

Distribution.—Abundant in hilly and mountainous districts up to an elevation of 5,000 feet in the islands of New Zealand.

31498. CALAMAGROSTIS YOUNGII (Hook. f.) Skeels.

(*Agrostis youngii* Hook. f. 1867, Handbook of the New Zealand Flora, p. 330.)

(*Deyeuxia youngii* Buchanan 1880. Manual of the Indigenous Grasses of New Zealand, p. vi.)

The seeds of this New Zealand pasture grass were received under the name *Deyeuxia youngii.* As Deyeuxia is not considered to be distinct from Calamagrostis and as this species is more closely related to the type of Calamagrostis than to the type of Agrostis, it is here placed in the former genus.

31489 to 31509—Continued.

31498—Continued.

Calamagrostis youngii was first found on dry hillsides at the source of the Waitaki River in the interior of the South Island of New Zealand, and Buchanan remarks regarding it: "In the district between the Clutha and Matamura rivers, Otaga, this grass is abundant and is much eaten by stock." (*Manual of Indigenous Grasses of New Zealand, p. 61.*)

31499. Festuca ovina L.

31500. Festuca rubra L.

31501. Savastana fraseri (Hook. f.) Skeels.

(*Hierochloe fraseri* Hook. f. 1844–45, Flora Antarctica, vol. 1, p. 93.)

The seeds of this grass were received from New Zealand under the name *Hierochloe fraseri*. The generic name Hierochloe was published by R. Brown (Prodromus, p. 208) in 1810, with one species *H. antarctica*. In 1789, however, Schrank (Baiersche Flora, vol. 1, pp. 100, 337) had established the genus Savastana, with one species, *S. hirta*. This is universally considered to be congeneric with *Hierochloe antarctica* R. Brown. Savastana being the older name for the genus, our species is placed here in accordance with present rules of botanical nomenclature.

Savastana fraseri was first found on the slopes of the mountains in Tasmania, and also grows in the mountainous districts of the islands of New Zealand.

31502. Koeleria kurtzii Hackel.

Distribution.—Abundant throughout the South Island of New Zealand, and also found in Argentina in South America.

31503. Poa australis R. Br.

The seeds of this grass were received from New Zealand under the name *Poa caespitosa*, which was first used by Forster (Prodromus, p. 89) in 1786, but was not described. The first description of the species seems to be by Sprengel (Mantissa Prima Florae Halensis, p. 33) in 1807, who published the name *Poa caespitosa* and referred to Forster's Prodromus. However, in 1804, Poiret (Encyclopédie Méthodique Botanique, vol. 5, p. 73) had published the name *Poa caespitosa* for a grass now considered to be *Poa nemoralis* L. This invalidates the use of the name *Poa caespitosa* by Sprengel in 1807. The next name applied to this species is *Poa australis*, published in 1810 by R. Brown (Prodromus, p. 179), the name here used.

"The most abundant grass through wide districts in the South Island, also plentiful in the elevated central portions of the North Island. Unfortunately it is not relished by stock and is seldom eaten, save in the absence of better food. Also in Australia and Tasmania." (*Cheeseman, Manual of the New Zealand Flora, 1906, p. 908.*)

31504. Poa colensoi Hook. f.

"This is one of the most important of the indigenous pasture grasses. It is eaten by all kinds of stock, and is a specially valuable sheep grass in mountain districts." (*Cheeseman, Manual of the New Zealand Flora, 1906, p. 909.*)

Distribution.—Mountain slopes and dry elevated plains rising to an elevation of 7,000 feet, in the islands of New Zealand.

31505. Poa kirkii Buchanan.

"This is a valuable grass for all kinds of stock in cool, elevated localities, and is well worth cultivation." (*Cheeseman, Manual of the New Zealand Flora, 1906, p. 910.*)

Distribution.—A variable grass, abundant on the subalpine plains and mountain slopes of the islands of New Zealand.

31489 to 31509—Continued.

31506. Poa maniototo Petrie.

Distribution.—In the dry plains and broad river basins of the interior of South Island in New Zealand.

31507. Poa sp.

31508. Triodia pumila (Kirk) Hackel.

31509. Trisetum antarcticum (Forst.) Trin.

Distribution.—Throughout the islands of New Zealand from sea level up to an elevation of 4,500 feet.

31510. Lycopersicon sp. **Tomato.**

From Matachin, Chagres River, Canal Zone. Presented by Mr. S. P. Verner. Received July 27, 1911.

"A native tomato." (*Verner.*)

31511 to 31536. Malus sylvestris Miller. **Apple.**

From New Zealand. Presented by Mr. W. C. Berridge, manager, Tauranga Experimental Farm, Fields and Experimental Farms Division, Department of Agriculture, Commerce, and Tourists. Received July 26, 1911.

Cuttings of the following aphis-resistant or aphis-proof apples:

"Most of the varieties have been proved to be proof against the ravages of the woolly aphis, but several have not yet been fully proved to be absolutely proof against it." (*Berridge.*)

31511. *Carlton.*

31512. *Cliff's seedling.*

31513. *Coldstream Guards.*

31514. *Diadem.*
"Not yet proved."

31515. *Early Richmond.*

31516. *Edward Lippiatt.*

31517. *Carrington.*
"Not yet proved."

31518. *Golden Summer Pearmain*

31519. *Irish Peach.*
"Not quite proof. An early variety."

31520. *John Sharp.*

31521. *Jupp's Surprise.*
"Not yet proved. Early."

31522. *Lady Hopetown.*

31523. *Lord Wolseley.*

31524. *Magg's seedling.*

31525. *Sharp's late red.*

31526. *Taupaki.*

31527. *Willie Sharp.*

31528. *Wm. Anderson.*

31529. *Yarrabank.*

31530. *Sharp's Summer.*

31531. *Black Spy.*

31532. *Commerce.*

31533. *Mayflower.*

31534. *Sharp's Midseason.*

31535. *Scarlet Queen.*

31536. *William H. E. Sharp.*

31537 to 31547. Solanum tuberosum L. **Potato.**

From Chile. Received through Mr. José D. Husbands, Limávida, via Molina, Chile, April 29, 1911.

"Tubers of yellow-fleshed potatoes of wild origin, all from the south along the foothills of the first range of the Cordilleras." (*Husbands.*)

31548 to 31552. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From India. Presented by Mr. E. J. Woodhouse, Department of Agriculture, Sabour, Bengal, India. Received July 26, 1911.

Seeds of the following:

31548. Chocolate variety.
31549. Greenish yellow.
31550. Black.
31551. *Nepali.*
31552. Yellow.

31553. CUPRESSUS GLABRA Sudworth. **Cypress.**

From Verde River Canyon, Ariz. Presented by Mr. George B. Sudworth, Forest Service, United States Department of Agriculture. Received July 29, 1911.

"Found on the north slopes in moist, rather rich, rocky soil. Elevation of 3,000 to 3,500 feet." (*Sudworth.*)

31554. EUCALYPTUS PATENTINERVIS R. T. Baker.

From Sydney, New South Wales, Australia. Presented by Mr. R. T. Baker, curator, Technological Museum. Received July 31, 1911.

"As the leaves of this tree exhale a pleasant odor it is recommended for park and street cultivation. The timber may be classed as a mahogany, being red, fairly hard, easily worked, and suitable for cabinet work." (*Baker.*)

Distribution.—A medium-sized tree found in the vicinity of Ballina in the northeastern part of New South Wales, Australia.

31555. ASPARAGUS sp. **Asparagus.**

From Canary Islands. Presented by Dr. George V. Perez, Puerto Orotava, Teneriffe, who procured them from the head gardener of the Puerto Orotava Botanic Garden. Received July 29, 1911.

Introduced for the breeding experiments of Mr. J. B. Norton, Bureau of Plant Industry.

31556. NYPA FRUTICANS Wurmb. **Nipa palm.**

From Manila, Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, July 31, 1911.

"This palm is abundant throughout the Malay region, growing especially in brackish marshes near the seashore. It often forms dense jungles, covering large areas, the leaves growing to a height of from 12 to 15 feet. The leaves are almost universally employed for thatching houses, the leaflets being stitched together for this purpose. From the flower stalk the sap is collected by the natives and boiled to obtain the sugar. More commonly this sap is used to manufacture alcohol. This palm will probably be adapted to the coastal conditions in extreme southern Florida." (*Piper.*)

Distribution.—From the Malay Peninsula and Ceylon through the Malay Archipelago to Australia.

31557. ARRACACIA XANTHORRHIZA Bancr. **Arracacha.**

From David, Republic of Panama. Presented by Mr. J. R. Lastra. Received July 28, 1911.

"A perennial herb of the carrot family. It attains a height of 2 or 3 feet. It has divided leaves like the carrot, small umbels of purple flowers, and has large fleshy roots which form an important article of food in South America and Central America." (*Smith, Dictionary of Popular Names of Economic Plants, p. 95.*)

"Probably best adapted to cultivation in the Southern States, as it is slow in maturing. Well worth the attention of amateurs." (*Fairchild.*)

31558. Ananas sp. **Ivirá.**

From Paraguay. Presented by Mr. Thomas R. Gwynn, Capilla Horqueta, Departmento de V. Concepcion, Paraguay. Received August 1, 1911.

"I do not know about this being superior to anything in the United States, but I do know if you eat two or three of the crude fruits blood flows from the lips and the teeth are set on edge. Only those can understand who have eaten green apples or sour cherries. The fruit has just the same taste as the cultivated pineapple, is also the same shape, but very small.

"The blade is narrower and the thorns shorter. The leaf is used for its fiber, producing ropes and clothing. Indeed, it is of great value.

"It is a running plant, growing from the roots, piercing in its course almost any obstruction. It is produced from the root or else from the plants formed on top of the fruit, just exactly as the pineapple." (*Gwynn.*)

Seeds.

31559. Stipa tenacissima Jusl. **Esparto.**

From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received August 10, 1911.

Distribution.—On the plains of the central and southern parts of Spain.

Procured for Mr. Charles J. Brand's experiments with plants for paper stock.

31560. Zea mays L. **Corn.**

From Buenos Aires, Argentina. Presented by Mr. Joseph E. Wing, of the United States Tariff Board. Received July 26, 1911.

"I bought this Argentine maize in Buenos Aires. It may be quite useful in our country in regions like western Nebraska or Colorado, since it matures here in a climate that will not mature our maize, owing to cold nights and drought." (*Wing.*)

31561 and 31562. Lycopersicon spp. **Tomato.**

From Peru. Presented by Dr. A. Weberbauer, German Legation, Lima, Peru. Received August 1, 1911.

Seeds of the following; quoted notes by Dr. Weberbauer:

31561. "Plant small, half a meter [20 in.] high, a half shrub with yellow flowers. Fruit as large as that of *Sorbus aucuparia.* Found above Lomas Harbor, at 1,000 to 1,100 meters [3,300 to 3,600 ft.]. Grows in a hot, almost rainless, entirely frost-free region in the dry bed of a stream which sometimes receives water from the rain falling in the higher mountains."

31562. "A climbing shrub 3 meters [9¾ ft.] high, with yellow flowers. Fruit as large as that of *Amygdalus persica;* green. Grows in a lateral valley of the river Apurimac in the vicinity of Andahuaylas, at about 2,600 meters [8,500 ft.]. Climate warm, generally frost free. From November to April it rains freely; from May to October there is almost none. The plants, however, grow always on the banks; they live likewise on soils constantly moist, but not swampy."

31563 to 31567. Nicotiana tabacum L. **Tobacco.**

From Mexico. Presented by Mr. George Young, secretary, Cananea Consolidated Copper Co., Cananea, Sonora, Mexico, who procured them from Juan Esteva & Son, Alvarado, Vera Cruz, Mexico. Received August 2, 1911.

Seeds of the following; quoted notes by Esteva & Son:

31563. "*Tabaco de Monte.*"

31563 to 31567—Continued.

31564. "*Huimanguillo.* This is grown in places rather warm, and its good quality as well as the peculiarity of being nicotinous, which, as you are aware, is an advantage in certain kinds of this weed and in the case of this plant is apt to be blended with other materials, is due, in our opinion, to the richness of the soil in which it is cultivated. This plant soon robs the soil of its nourishment and at the end of a certain number of years requires renovation of the soil unless the same is properly fertilized."

31565. "*Ozumacin.* This variety of tobacco is grown in a warm climate and in a soil that is somewhat distant from the river bank, as it is claimed that tobacco grown at a short distance from the water has an acrid and bitterish taste."

31566. "*Simojovel.* This variety grows wild and the Indians follow the practice of cutting its leaves little by little, according to the condition of the plant."

31567. "*Valle Nacional.* This variety is grown in a temperate climate and the elasticity of its leaves on being wet is due to this fact, as is also the color of its leaves and their freedom from stain, although this generally depends on the care which is being taken at the time of cutting them; it is necessary to protect the plant from the sun after a shower has fallen, otherwise the leaves will be covered with yellow spots which we call 'pinta de agua' (water-mark)."

31568 to 31570. (Undetermined.)

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, April 29 and June 22, 1911.

Bulbs of the following; quoted notes by Mr. Husbands:

31568. "(H. No. 1150 and 1151.) A carmine-red. Blazing flowers of good size. Plant, dwarf; late; good."

31569. "(H. No. 993.) Crimson with white stripes; fall flowering. Grows in the baked clays of central Chile."

31570. "(H. No. 991 and 992.) Crimson. Dwarf plant. Flowers in the summer. Thrives in dry sands or soils. From V. Antuco."

31571. Syzygium cumini (L.) Skeels.

(*Myrtus cumini* L. 1753, Species Plantarum, p. 471.)

(*Eugenia jambolana* Lam. 1789, Encyclopédie Méthodique Botanique, vol. 3, p. 198.)

The seeds of this East Indian myrtaceous tree were received under the name *Eugenia jambolana*, which was given to the species by Lamarck in 1789. However, Linnæus, in 1753, had given the name *Myrtus cumini* to a tree from Ceylon, and the specimen on which this name was based is preserved in the British Museum herbarium, and was identified in 1887 by H. Trimen (Journal of the Linnean Society, Botany, vol. 24, p. 142) as *Eugenia jambolana* Lam. This species being now considered to belong to the genus Syzygium, the earlier specific name is here placed in that genus in accordance with present rules of botanical nomenclature.

From Philippine Islands. Presented by Mr. C. V. Piper, of the Bureau of Plant Industry. Received July 26, 1911.

"*Duhot* or *Lunaboy.* A large tree, in common cultivation. Ripe fruit black, oblong, nearly 1 inch long; stone large. Flavor when ripe like a Black Republican cherry;

when unripe is quite astringent. Fruit in clusters of 10 to 40. Near Manila the fruit ripens from May 15 to June 15." (*Piper.*)

Distribution.—Found throughout India and Ceylon and extends through the Malay Archipelago to Australia. It also occurs under cultivation in the West Indies.

31572 to 31576.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 4, 1911.

Cuttings of the following; quoted notes by Mr. Wercklé:

31572 and 31573. MANGIFERA INDICA L. **Mango.**

31572. "*Gran cazique* (Great Chief). Fruit very large; crimson and violet in color; few fibers; best quality; very fertile."

31573. "Fruit very large and beautiful; carmine and violet in color; solid, few fibers, much meat; best quality; very fertile."

31574 to 31576. ANNONA sp. **Annona.**

"From San Francisco, Nicaragua. Fruit delicious. Trees bear the second year. These cuttings are from three differently shaped trees. No. 31574 is a seedling, and is considered the best."

31577 to 31608.

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, July 26, 1911.

Seeds of the following; notes by Mr. Piper:

31577. BRYONOPSIS LACINIOSA (L.) Naudin.

"From Davao, May 14, 1911. A slender, cucurbitaceous vine with pretty leaves. Perhaps of ornamental value. Fruits size and shape of a pecan, yellow."

Distribution.—Throughout the tropical regions of Africa, Asia, the Malay Archipelago, and Australia.

31578. CAJAN INDICUM Spreng. **Pigeon-pea.**

"Purchased in the market at Jaro, Panay, May 3, 1911. The speckled seeds are probably hybrids between the black and the white."

31579. CLERODENDRUM CUMINGIANUM Schauer.

"From La Carlota, Negros, May 1, 1911. A luxuriant, herbaceous plant with large, velvety cordate leaves. Panicle purple, remaining so in age."

31580. CLERODENDRUM INTERMEDIUM Chamisso.

"From La Carlota, Negros. A beautiful, luxuriant herb growing 6 to 10 feet tall, with large, opposite, cordate, somewhat dentate, leaves. Panicle large, scarlet, the calyx and peduncles remaining so for a long time. Should make a fine tropical annual plant."

Distribution.—Known only from the Philippines.

31581. CROTALARIA SALTIANA Andrews 1811.
(*Crotalaria striata* Schrank 1828.)

"From Iloilo, May 6, 1911. A half-shrubby bush, 3 to 6 feet high."

Distribution.—Throughout tropical and southern Africa and in tropical Asia and South America.

31582. GOSSYPIUM sp. **Kidney cotton.**

"A variety found on the island of Marinduque. A company testing it has 12 acres planted and has high hopes of it. Apparently a form of *Gossypium braziliensis*. Prof. Conner, of the Manila Bureau of Agriculture, says they have obtained the same sort from various islands of the Philippines."

31577 to 31608—Continued.

31583. GOSSYPIUM NANKING Meyen. **Cotton.**

"From Argao, Cebu, April, 1911."

31584. MOMORDICA OVATA Cogn.

"A peculiar cucurbit with subglobose, spiny fruits about the size of a lemon. Said to be used as a headache cure. Cultivated at Cagayan, Misamis; collected April 29, 1911."

Distribution.—Found in the Philippine and Celebes Islands.

31585. ORMOSIA CALAVENSIS Azaola.

"A locustlike tree from Siquijor, May, 1911."

Distribution.—Known only from the Philippines.

31586. PAHUDIA RHOMBOIDEA (Blanco) Prain.

"*Balayong* or *Tindalo*. A valuable timber tree. Seeds used for some medicinal purpose. These were purchased in the market at Batangas, Luzon."

Distribution.—Known only from the Philippines.

31587. CRACCA DICHOTOMA (Desv.) Kuntze.

"Stems slender, suberect, 2 to 3 feet high. Seed habits excellent."

Distribution.—Known only from the Philippines.

31588. TRICHOSANTHES QUINQUANGULATA A. Gray.

"A cucurbitaceous vine with beautiful, globose, smooth, red fruits as large as an orange. From San Miguel, Tarlac, June, 1911."

Distribution.—Known only from the Sulu Archipelago in the Philippines.

31589. MANIHOT ESCULENTA Crantz. **Cassava.**

"A native variety grown at the Los Banos Agricultural College. Earliest variety found here, maturing in five months. Roots sweet. Presented by Dr. E. B. Copeland."

Distribution.—A herbaceous plant with tuberous roots found in a wild state in Brazil and generally cultivated in the Tropics.

31590. HETEROSPATHE ELATA Scheff. **Palm.**

"A tall, graceful palm cultivated at Argao, Cebu. Leaves pinnate, recurved. Panicle large, drooping. Also seen wild near Cabadbaran, Mindanao."

Distribution.—An erect, unarmed palm, found in the Molukkas and the Philippines.

31591. ARUNDINELLA SETOSA Trin.

"Tall, erect, not very leafy, grows 3 to 4 feet high, of about the habit of tall meadow oat-grass. Stock are apparently not fond of it. Seed habits good. From Baguio, April 10, 1911. Should be tested at Biloxi, Miss.; Chico, Cal.; and Arlington Farm, Va."

Distribution.—From the western Himalayas, where it reaches an elevation of 5,000 feet, southeastward through India and China to the Philippines.

31592. CANAVALI sp.

"From the seashore of Davao, May 14, 1911."

31593. CROTALARIA INCANA L.

"A bushy, half shrubby, annual (?) legume forming plants 3 to 6 feet high and 2 to 4 feet across. Flowers yellow. Producing seeds in abundance. Manila, April, 1911."

Distribution.—Throughout the Tropics, either naturalized or cultivated; probably a native of the West Indies.

31577 to 31608—Continued.

31594. Meibomia heterocarpa (L.) Kuntze.

"From Hinatuan, Surigao Province, Mindanao, May 13, 1911. Suberect, 3 to 4 feet high, very fruitful. Perennial (?). Stems hard but not woody."

Distribution.—Southeastern Asia, extending from the Himalayas in northern India eastward through Burma and Malakka to China and Japan, and throughout the Malay and Polynesian archipelagoes to Australia.

31595. Syntherisma ciliaris (Retz.) Schrad. **Crab-grass.**

"From La Carlota, Negros, May, 1911. Much larger than our common crab-grass but of same habit and value. To be tested at Biloxi, Miss., and Arlington Farm, Va."

31596. Capriola dactylon (L.) Kuntze. **Bermuda grass.**

"From Lamao, June, 1911. A small crab-grass forming pure growths and becoming 12 to 18 inches high.

31597. Eriochloa ramosa (Retz.) Kuntze.

"From Alabang, May 28, 1911. A common grass in rather low ground. Stems slender, fairly erect. Seed shatters easily. Of value only as a pasture grass, provided it will spread."

Distribution.—The plains of India and generally distributed in the Tropics.

31598. Echinochloa colona (L.) Link.

"From Lamao, June, 1911. This volunteers in cultivated fields like crab-grass. Cattle and carabao eat it readily."

31599. Panicum distachyon L.

"From Lamao, June, 1911. A grass forming great, loose mats 2 to 6 feet across. When growing thickly it becomes 18 inches high. Apparently of considerable value as a pasture grass, especially in sandy soil."

Distribution.—The plains of India and eastward to China and through the Malay Archipelago to Australia.

31600. Paspalum longifolium Roxb.

"From San Miguel, Tarlac, May 30, 1911. A perennial tufted species."

Distribution.—Throughout the warmer parts of India and generally scattered in the Tropics.

31601. Prosopis juliflora (Swartz) DC. **Algaroba.**

"A species much like our common mesquite, quite abundant around the shores of Manila Bay. The pods are not nearly so good as the Hawaiian mesquite, but cattle are said to eat them. Mr. Merrill, of the Manila Bureau of Agriculture, is pretty certain that it is not native, but an introduction from America, perhaps changed by its environment here."

31602. Stizolobium sp.

"Found in woods near La Carlota, Negros, May 1, 1911."

31603. Stizolobium sp.

"From Bosoc, Negros, May, 1911."

31604. Stizolobium pruriens (Stickm.) Medic.

"This may be identical with No. 31602, but is probably different."

31605. Syntherisma ciliaris (Retz.) Schrad. **Crab-grass.**

"Much like the common crab-grass, but larger and more vigorous."

31577 to 31608—Continued.

31606. VIGNA LUTEA (Swartz) A. Gray.

"A luxuriant species growing on and near the strand at Tacloban, Leyte. Habit that of a very viny catjang. Flowers yellow. The best Vigna I have seen outside of the cultivated ones. In one place this seemed to be cultivated and the seeds are said to be eaten."

Distribution.—Originally described from Jamaica; cosmopolitan in the Tropics.

31607. VIGNA LUTEA (Swartz) A. Gray.

"Grows on the strand at Surigao, also at Tacloban, Davao, and Tandag. Forms running vines 6 to 12 feet long and under favorable conditions grows up shrubs to a height of 12 to 15 feet. Very vigorous and quite fruitful. No disease."

31608. VIGNA SINENSIS (Torner) Savi. Cowpea.

"Purchased in the market at Jaro, Panay, May 3, 1911."

31609 to 31612. MEDICAGO spp.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, April 21, 1911.

Seeds of the following; quoted notes by Mr. Husbands:

31609. MEDICAGO ARABICA (L.) All.

The size and venation of the pods are the same as in the species, but the spines are wanting or reduced to small tubercles, bridging the dorsal ridges of the pod.

"A new beardless type."

31610. MEDICAGO ARABICA (L.) All.

"An old bearded sort."

31611. MEDICAGO HISPIDA RETICULATA (Benth.) Urban.

"A new beardless sort."

31612. MEDICAGO HISPIDA DENTICULATA (Willd.) Urban.

"The same as the preceding, but bearded."

"The country people are aware of two kinds of seed pods, i. e., beardless and bearded, but they think that it is the same plant that produces them and that more or less prickles are due to moisture conditions. Everyone says there is but one kind. I found a very few plants by patient search and was able to obtain four kinds. Each kind of seed is from a separate and distinct plant.

"In their dry states the plant characteristics could not be studied. I am convinced that a study of the live plants will reveal many varieties to which scientific attention has not been given. Roaming about I have often noticed the great variations in this plant, the distinct black markings or lack of them, the varied form of leaves and plant, the degrees of growth from flat on the ground to 5 feet high, with many intermediate growths side by side in the same soil, while both the bearded and the beardless sorts grow together in dry and moist or irrigated lands, the proportion of each being marked.

"In the 'vegas,' or moist plains, which adjoin the foothills and also growing wild in irrigated fields, planted with corn, potatoes, beans, peas, pumpkins, etc., the bearded sorts predominate, and the beardless sorts are scattered sparingly among them. On the contrary, in the dry farm lands the beardless varieties prevail in like proportions. This suggests the fact that the beardless has an affinity for dry lands, which may be useful to follow with a view of producing a dry-land alfalfa.

"Botanists say that these seeds were introduced from Europe. This is hard to believe. It seems to me that no plant has the *chilensis* brand more clearly marked; I have found stray plants in the most remote parts of Chile, in the Cordilleras far away from civilization, and the possibility of being the product of seeds from other localities. Its distinctly different type in every respect and varied in each locality all go to show its indigenous character."

31613. THESPESIA POPULNEA (L.) Solander. **Suriya.**

From the Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 8, 1911.

"A shrub or small tree with large, yellow, trumpet-shaped blossoms. Cultivated more or less as an ornamental." (*Piper.*)

31614. PERSEA AMERICANA Miller. **Avocado.**

From Livingston, Guatemala. Presented by Mrs. Lucie Potts. Received August 24, 1911.

Supposed to contain different varieties.

31615. MANGIFERA INDICA L. **Mango.**

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 9, 1911.

"*Rio Grande.* Best variety. Very big. Best quality." (*Wercklé.*)

Seeds.

31616. PERSEA AMERICANA Miller. **Avocado.**

From Guatemala, Central America. Presented by Mr. S. Billow, Guatemala. Received August 9, 1911.

"These seeds are from Amatitlan, about 24 miles from the capital city and grown at an altitude of 3,800 feet; the meat is of a delicious flavor and the avocados weigh nearly three-fourths of a pound. These seeds are selected from the best grown in that district." (*Billow.*)

31617. MEDICAGO sp.

From near Baba, northwestern Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 10, 1911.

"(No. 1618a, May 1, 1911.) (*Medicago falcata ?.*) An alfalfa that reaches a height of apparently not over 2 feet. Found growing here and there in large quantities on hills, between dense grass at altitudes of about 4,000 feet. As the cold gets very intense in these regions, these plants may be tested in the most northern sections of the United States." (*Meyer.*)

31618 to 31630.

From Canal Zone. Presented by Mr. Ramón Arias-Feraud, Panama. Received August 10, 1911.

31618. ANANAS SATIVUS Schult. **Pineapple.**

"Suckers of the genuine *Taboga* pineapples, which are considered the best flavored in this region. They are getting scarce because they do not grow as large as other varieties, and as the leaves are covered with plenty of spines the planters prefer to handle the larger fruits that are free from the spines."

31618 to 31630—Continued.

31619. GARCINIA sp. **"Monkey-fruit."**

"A beautiful evergreen tree, the fruit of which the boys like very much. The seeds are enveloped and the inner shell lined with a milky white pulp, which is chewed and which has a peculiar sweet, acid taste. There is a larger variety of this fruit that is still better, but the crop has already passed. I brought these plants from the Cordilleras about 10 years ago, in seeds, and they have begun to bear now. They are not found near the surroundings of the town, but out on the mountains." (*Arias-Feraud.*)

31620 to **31630.** MANGIFERA INDICA L. **Mango.**

From "El Carmen" orchard, Las Sabanas, Canal Zone.

31620. *Green.*
31621. Quality No. 2.
31622. *Red Apple.*
31623. *Pico de Pajaro.* (Bird's Beak.)
31624. Thick skin.
31625. *Kidney.*
31626. Round.
31627. Soft, sweet.
31628. Common quality.
31629. *Pineapple.*
31630. Assorted mangos.

31631. PERSEA AMERICANA Miller. **Avocado.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

Probably Mr. Husbands' No. 1325 of which he says:

"*Paltas.* These seeds are from fruits selected from among all the best varieties growing in Quillota as the best of all, having smaller seeds, thicker flesh, and the most delicious flavor of any. Trees grown from seed fruit in five years. Believed to come true from seed, but nothing is scientifically known about it." (*Husbands.*)

31633 and 31634.

From Peradeniya, Ceylon. Presented by Dr. John C. Willis, director, Royal Botanic Gardens, Peradeniya. Received August 14, 1911.

Seeds of the following:

31633. MANGIFERA ZEYLANICA (Blume) Hook. f.

Distribution.—A tree found on the island of Ceylon up to an elevation of 3,000 feet.

31634. SPONDIAS PINNATA (L.) Kurz.

See Nos. 30491 and 30627 for previous introductions.

31635 to 31637.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 14, 1911.

Seeds of the following; quoted notes by Mr. Wercklé:

31635. BOMAREA sp.

"*Papa de venado* (Dear potato). Edible roots. Quite productive. Grows near frost line."

31636. COCCOLOBIS UVIFERA L. **Sea-grape.**

"*Papaturros.* Improved large-fruited. For crossing with the *carrocaliente*" (See No. 31931, *Coccolobis* sp.).

31637. COUEPIA POLYANDRA (H. B. K.) Rose. **Yellow sapote.**

"The famed *sapotilla de olor.*"

Distribution.—A tree, belonging to the rose family, found in the vicinity of Acapulco on the Pacific coast of southern Mexico.

31638. DIOSCOREA sp.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 15, 1911.

"*Haiauque.* A dainty vine elegant for window or table decoration. Tubers edible when cooked." (*Husbands.*)

31639. RHUS VERNICIFLUA Stokes. **Lacquer tree.**

The lacquer tree has heretofore been listed in these inventories as *Rhus vernicifera*, which was published in 1825 by De Candolle (Prodromus, vol. 2, p. 68). In 1796, however, Salisbury (Prodromus, p. 169) published the name *Rhus verniciferum*, based on *Rhus vernix* L., thus invalidating the use of the same name by De Candolle. *Rhus vernix*, published in 1753 by Linnæus (Species Plantarum, p. 265) included two distinct species, the poison sumac of America and the lacquer tree of Japan. In 1771, Linnæus (Mantissa Plantarum, p. 358) excluded the Japanese plant from *R. vernix*, thus showing that he wished the name to apply to the American plant. As no other name had been published for either of these plants up to this time there is no reason why this should not be followed. In 1812, Stokes (A Botanical Materia Medica, vol. 2, p. 164) called attention to this fact in a note under his description of *Rhus verniciflua*, which is apparently the earliest name published for the lacquer tree, and is the one here used.

From Japan. Presented by Mr. Thomas Sammons, American consul general, Yokohama, Japan, who procured them from Mr. Metsunosuke Yamaguchi, Shindamachi, Nagano, Nagano Prefecture, Japan. Received July 26, 1911.

"A slender-branched tree with winged leaves, attaining a height of 20 feet. It is common throughout Japan and is cultivated for its sap, which flows from its stem and branches on being wounded. It is first cream colored, but on exposure to the air soon turns black, and is the varnish which the Japanese use for lacquering their furniture or ornamental articles." (*Smith, Dictionary of Popular Names of Economic Plants, p. 426.*)

"The varnish or lacquer is valuable because of its great hardness without brittleness or becoming cracked, its high lustre and mirrorlike surface, which remains untarnished for centuries, its resistance to the agencies which attack resinous varnishes, as it is not injured by boiling water, hot ashes, hot alcoholic liquors, acids, etc." (*J. J. Rein, Industries of Japan.*)

"Unlike ordinary paints, which dry because of oxidizing properties of the oil in them, this Japanese lacquer dries better in moist than in dry air, as the result of a supposed enzyme which acts upon an albuminoid in the presence of a vegetable-acid and a gum.

"Experiments have shown that lacquer will not harden if subjected to temperatures which are high enough to coagulate the albumen. From a painful personal experience with some of the imported juice of this tree I can warn anyone not to experiment with it unless he is immune to ivy poisoning. Here would seem to be an opportunity to discover means by which with the use of proper face and hand lotions workers could handle the lacquer with impunity. Certainly, so wonderful a thing as this lacquer industry should not go without investigation because of its poisonous properties." (*Fairchild.*)

Experimenters with this tree should remember that the volatile sap causes a painful eruption on the skin of certain persons similar to that caused by the species of our common Rhus known as poison ivy, though probably more intense even than the latter.

Distribution.—On the wooded slopes of the mountains in the islands of Japan and in the provinces of Ichang, Shensi, and Szechwan in China.

31640. JUGLANS REGIA L. **Walnut.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, June 12, 1911.

"A large Chile variety of accidental origin from Chile-grown seed. The year was one of extreme drought and therefore the nuts are smaller and with less meat than usual." (*Husbands.*)

31641. CUCURBITA sp. **Squash.**

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received August 14, 1911.

"*Zapallo.* I consider this a very ordinary variety. These zapallos have no distinguishing names; all are just zapallos, or squash in English." (*Mead.*)

31642. LUCUMA OBOVATA H. B. K.

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

"*Lucuma de Quillota.* The skin of this fruit is a bright, dark green, flesh yellow, very much like a pumpkin but lighter colored and more mealy." (*Husbands.*)

Distribution.—The provinces along the coasts of Peru and Chile.

31643 to 31645.

From Seharunpur, India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens, United Provinces. Received August 15, 1911.

Seeds of the following:

31643. BAMBOS ARUNDINACEA Retz. **Bamboo.**

See No. 21317 for description.

31644. DIOSPYROS MONTANA Roxb.

Distribution.—From the Himalayas to Ceylon in India, and through the Malay Archipelago to tropical Australia.

31645. CHALCAS PANICULATA L.

31646 to 31649.

From India. Presented by Mr. A. C. Hartless, superintendent, Government Botanical Gardens, United Provinces, Seharunpur. Received August 15, 1911.

Seeds of the following; notes furnished by collector and transmitted by Mr. Hartless:

31646 and **31647.** MELILOTUS ALBA Desr. **Sweet clover.**

31646. From Ladakh. **31647.** Locality not given.

31648. MEDICAGO SATIVA L. **Alfalfa.**

"*Bu-Kusk*, from Iskardo. This variety once cultivated remains for at least 8 or 9 years, provided that bhail (manure) is thrown on it and it is not trodden upon. Its flower is of blue color. It is of short stature with thin branches. Animals eat it with great pleasure. If, when green, animals eat it, it does no harm."

31649. MEDICAGO FALCATA L.

"*Boole Bu-Kusk*, from Iskardo. This variety once cultivated remains for at least three or four years. If it is given to animals when green, it swells their stomachs. Its flower is yellow in color, and its plant is larger than that of the preceding number, but animals do not like it as well."

31651. CITRUS MEDICA L. **Citron.**

From Villa Rica, Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion, Paraguay. Received August 18, 1911.

"These citrons were found in a shipment of oranges, etc., from Villa Rica. Whether they are out of the ordinary or not I can not say. Largest citron weighed 4½ pounds, 22 inches in circumference the long way by 13 inches in circumference around the center. When conditions are excellent for growth, fruits up to 12 inches in length are not uncommon. The plant is of scraggly growth, the branches reaching down to the ground if not pruned and sprouting wherever they touch. The peel is used to some extent here for preserves." (*Mead.*)

31652 and 31653.

From Pietermaritzburg, Natal, South Africa. Presented by Mr. W. J. Newberry, curator, Botanic Gardens. Received August 18, 1911.

Cuttings of the following:

31652. PRUNUS sp. **Plum.**

"*Methley.* This originated near Mr. Methley's homestead, the original tree being a volunteer and growing near a spruit hard by. This seedling, to-day the parent of thousands growing throughout the colony, attracted attention directly it first fruited, owing to the earliness with which the plums ripened; that is, at the same time as our local myrobalan (myrobalan is used throughout as a group name), possibly the *Marianna* and frequently but erroneously called the *Mirabelle.*

"The virtue of the *Methley* is its early ripening. It possesses the good characters of the *Satsuma*, but is deficient in point of size.

"There is every reason to believe that the plum originated from the fertilizing of *Satsuma* flowers by myrobalan pollen, the male element transmitting the smaller size and earliness of ripening and not impairing with myrobalan faults the flavor and texture of the *Satsuma.*

"From inquiries it seems that some blood plums were sent to Mr. Methley from another farm from trees growing in juxtaposition to myrobalans. After this lot of fruit had been partaken of, the stones were thrown out. From one of these pits washed down toward the sluit by the weather it is assumed the original *Methley* grew. As no other adventitious plums came into being, it is rather interesting to speculate upon this one survival, which may, of course, have been the only cross-pollenized seed of the lot.

"The color of the fruit is dark red, ripening to darker red; dots numerous, russet, areolar; bloom, whitish or bluish; flesh, dark red, firm; stone, medium in size, cling; flavor and quality good; season very early; thrives on peach stock." (*Extract from C. Fuller in Natal Agricultural Journal, vol. 14, 1910, pp. 279–280.*)

31653. MALUS sp. **Apple.**

Wainwright. "A good subtropical apple." (*Newberry.*)

31654. OXALIS sp.

From Chile. Received through Mr. José D. Husbands, Limavida, Chile, August 14, 1911.

"*Chapeola.*"

Tubers.

31655 to 31676. SOLANUM spp. **Potato.**

From Chile. Received through Mr. José D. Husbands, Limavida, via Molina, Chile, August 14, 1911.

Tubers of the following; quoted notes by Mr. Husbands:

"These potatoes, sorts that are cultivated by the Indians, all of wild origin, are from the wild country of the interior of Llanquihue. The Indian names have little significance, as the same names may be used for other kinds of potatoes by distant tribes or the same tubers called other names."

31655 to 31665. "White and semiyellow kinds."

31655. "*Guicañas.*"
31656. "*Ojosos*, smooth."
31657. "*Coraila*, white."
31658. "*Pedanes.*"
31659. "*Bolera blanca.*"
31660. "*Guafas.*"
31661. "*Yacuis azules.*"
31662. "*Haurunas.*"
31663. "*Puineriza rosada* (pink). Very early; said to yield potatoes in seven weeks."
31664. "*Murtă.*"
31665. "*Libra.*"

31666 to 31676. "Yellow-fleshed varieties."

31666. "*Palmata.*"
31667. "*Panas.*"
31668. "*Araucana mus-ca.*"
31669. "*Chilota.*"
31670. "*Ocas.*"
31671. "*Almud.*"
31672. "*Cauchan.*"
31673. "*Pelchuquina.*"
31674. "*Sieta semana rosada.* Pink skin; very early; said to give potatoes in seven weeks."
31675. "*Vigcochas.*"
31676. "*Piconas.* Extra early."

31677 to 31679. JUNIPERUS UTAHENSIS (Engelm.) Lemmon. **Juniper.**

Received through Mr. George B. Sudworth, dendrologist, Forest Service, U. S. Dept. of Agriculture, August 19, 1911.

Seeds of a very attractive southwestern juniper:

31677. From Yavapai County, Ariz., October, 1910.

31678. From southern Utah, December, 1910.

31679. From the Grand Cañyon of the Colorado River, Ariz., November, 1910.

Distribution.—In the desert region between the Rocky Mountains and the Sierra Nevada, from southern Wyoming southwestward through eastern Utah and western Colorado to northern Arizona and southeastern California.

31680. GOSSYPIUM DRYNARIOIDES Sēemann. **Cotton tree.**

From Hawaii. Presented by Mr. Ralph S. Hosmer, Superintendent of Forestry, Honolulu, at the request of Dr. E. V. Wilcox, Hawaii Agricultural Experiment Station, Honolulu. Received August 14, 1911.

"I have learned that at the 'west end of Molokai,' in the driest locality of the island, where this plant was originally collected by Nelson, the companion of Capt. Cook, there is only one tree in existence and that is half dead. A new locality on the island of Hawaii has been discovered and six trees are still growing on the slopes of the volcano Hualalai on rough lava fields at an elevation of 2,000 feet. The trees are

from 15 to 25 feet high and when covered with large scarlet flowers are of striking beauty. If not properly protected they will soon be a thing of the past, as the natives strip the trunks of the bark for the rich reddish brown sap used by them for dyeing their fish nets. Cattle are also very fond of the leaves. The plants from the island of Hawaii differ so much from those on Molokai as to need a new varietal name." (*Joseph F. Rock, Botanist, College of Hawaii, Honolulu.*)

31681 and 31682. PITTOSPORUM spp.

From Hawaii. Presented by Mr. Ralph S. Hosmer, Superintendent of Forestry, Honolulu, at the request of Dr. E. V. Wilcox, Hawaii Agricultural Experiment Station, Honolulu. Received August 14, 1911.

Seeds of the following:

31681. PITTOSPORUM HOSMERI Rock.

"This species is remarkable for the unusually large woody capsules which open into two, three, and sometimes four valves. Native name *Aawa hua kukui*. The fruits exude a milky glutinous sap." (*Report of the Division of Forestry, Territory of Hawaii, for the Biennial Period Ending December 31, 1910, p. 84.*)

Distribution.—This tree is rather common on the lava fields of Puuwaawaa, Hawaii, at an elevation of 3,000 feet.

31682. PITTOSPORUM KAUAIENSE Hillebrand.

Distribution.—A tree usually about 30 feet high, growing on the slopes of the mountains in the vicinity of Waimea on the island of Kauai in Hawaii.

31683. SOLANUM sp. **Potato.**

From Perene, Peru. Presented by Mr. J. A. Furlong. Received August 18, 1911.

"*Shiri*, or bitter potatoes." (*Furlong.*)

Tubers.

31684. PHOENIX DACTYLIFERA L. **Date.**

From Morocco. Purchased from Barrow, Lane, & Ballard (Ltd.), London, England. Received August 18, 1911.

Tafilelt. See No. 18630 for description.

Seeds.

31685. ERAGROSTIS PECTINACEA (Michx.) Nees.

From Ainsworth, Nebr. Presented by Mr. G. J. Kimball, through Mr. H. N. Vinall, of the Bureau of Plant Industry. Received August 21, 1911.

"One of the grasses which seems to be of most promise for seeding in the sand hills of Nebraska." (*Vinall.*)

Distribution.—In dry, sterile soil from New Hampshire to Florida and westward to South Dakota and Texas in the United States, and southward in Mexico to Vera Cruz.

31686. LICANIA PLATYPUS (Hemsl.) Fritsch.

From San Jose, Costa Rica. Presented by Mr. C. Wercklé. Received August 21, 1911.

"*Sansapote.*"

Distribution.—A tree found in Central America from Nicaragua, where it is cultivated, southeastward through Costa Rica and Panama to Colombia.

31687. MEDICAGO SATIVA L. **Alfalfa.**

From Chugutchak, Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

"(No. 1617a, May 16, 1910.) A strain of alfalfa said to be much hardier than the ordinary varieties, but also said to be of slower growth. While fields sown to imported Turkestan seed give three cuttings a year in Chugutchak, this variety gives but two, but while one-third of the plants of the Turkestan alfalfa are killed in a severe winter, this strain is said not to suffer at all. It should be tested in a cool and dry region of the United States, especially in Wyoming, Montana, Idaho, etc. This seed was saved by a Sart farmer from his own plants and obtained through the assistance of the Russian Aksakal at Chugutchak." (*Meyer.*)

31688 to 31697.

Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

Seeds of the following:

31688. MALUS sp. **Apple.**

From mountains near Kulja, Chinese Turkestan.

"(No. 1619a, April 20, 1911.) Very hardy wild apples, collected in semiarid mountains at altitudes between 5,000 and 6,000 feet above sea level. The trees growing at 4,500 feet were in bloom at time of visit, but those at altitudes between 5,500 and 6,000 feet above sea level were perfectly dormant. To be used as hybridization material in creating hardier varieties which will be able to stand better than most of the present strains, the climate of the upper Mississippi Valley and the regions west of it. See also Nos. 968 to 971 (S. P. I. Nos. 30946 to 30949) in connection with this." (*Meyer.*)

31689. MALUS sp. **Apple.**

From Saisansk, southern Siberia.

"(No. 1620a, May 29, 1911.) An apple, said to grow in gardens around Saisansk; apparently seedlings from wild varieties, occurring in the mountains. The remarks made under Nos. 968 to 971 and 1619a (S. P. I. Nos. 30946 to 30949 and 31688) also apply to this one." (*Meyer.*)

31690. MALUS sp. **Apple.**

From Saisansk, southern Siberia.

"(No. 1621a, May 29, 1911.) A small apple of bright-red color and possessing a most excellent flavor. Said to be grown sparingly near Saisansk; apparently an improved variety of *Malus baccata* or perhaps a hybrid; is sold locally dried as a sweetmeat and for compote and preserve material. To be used for the same purposes as the preceding." (*Meyer.*)

31691. SORBUS sp.

From near Santai, Mongolia.

"(No. 1622a, April 23, 1911.) A rowan tree found on the north slopes of a semiarid mountain, occurring at altitudes between 8,000 and 9,000 feet; is more or less shrubby in growth. Apparently very resistant to cold and adverse conditions; recommended therefore as an ornamental garden and park shrub for the most northern sections of the United States." (*Meyer.*)

31692. ROSA sp. **Rose.**

From near Bogh-dalak, Mongolia.

"(No. 1623a, April 24, 1911.) A small growing rose, occurring on sunburned, dry, rocky hills at altitudes of between 6,000 and 7,000 feet. Of value possibly in hybridization work to create hardy, drought-resistant strains of yellow-flowered roses." (*Meyer.*)

31688 to 31697—Continued.

31693. Rosa sp. **Rose.**

From near Ghapsagai, Mongolia.

"(No. 1624a, April 26, 1911.) A shrubby rose found in dry, stony places at an altitude of 3,700 feet. May be yellow flowered; if so, the same remarks apply to it as made on the preceding number." (*Meyer.*)

31694. Rosa sp. **Rose.**

From near Ghapsagai, Mongolia.

"(No. 1625a, April 27, 1911.) A wild rose of rather tall, bushy growth, covered with numerous spines, which are very white, color of flowers apparently rose. Of value possibly as a stock in dry, cold regions and as a factor in hybridization work." (*Meyer.*)

31695. Rosa persica Michx. **Rose.**

From near Ghapsagai, Mongolia, Russian territory.

"(No. 1626a, April 27, 1911.) A very rare and curious rose having small, yellow flowers and undivided, glaucous foliage; looks not unlike a barberry; grows to a height of from 1 to 3 feet. Occurs on dry clayey ridges and on alkaline loess plains between other vegetation. Of botanical interest only." (*Meyer.*)

31696. Satureja sp.

From near Barlik, Mongolia.

"(No. 1627a, May 1, 1911.) A labiate closely allied to thyme, having very pleasantly flavored foliage that can be advantageously used in soups, with meats, pickles, etc. Occurs on dry, rocky ridges and between stony débris. Especially suitable for the drier sections of the United States as a savory garden herb." (*Meyer.*)

31697. Raphanus sativus L. **Radish.**

From Chugutchak, Mongolia.

"(No. 1628a, May 16, 1911.) A medium-large variety of Chinese winter radish, called *Ching loba*. An excellent winter vegetable, which is eaten alike by Russians, Tartars, Sarts, Kalmucks, and Chinese, although introduced and grown by the last-named only in these parts of the world.

"The Chinese way of serving is to slice them in very thin strips, to sprinkle some soy-bean sauce or old vinegar over them, and to eat them as an appetizer. The Russian way, however, is to cut them in square strips, to sprinkle salt over them and a liberal quantity of vinegar, and to serve them as a salad with the regular meal.

"The plants like a well-drained yet rich soil and do not object to a certain amount of alkali. They require water and must be irrigated in times of drought, as otherwise they remain stunted and acquire a pungent taste. They are sown out in the latter part of July or early August, three to four seeds per hill and 1 to 1½ feet apart in all directions. Later on the plants are thinned out, so that only one is left, like beet roots, for instance.

"They stand light frosts, but must be harvested before the heavy frosts begin. They are pulled out by a twist of the hand and are left to dry out for some hours on the field; then the leaves are torn off and the roots are stored in dug-out cellars, much like potatoes or sugar beets. A few of the best are saved and planted out as soon as the danger of frosts is passed.

"These winter radishes deserve to become better known in the United States. They are of easy culture, attractive appearance, and possess a refreshing taste, while their appetizing and stomach-strengthening properties are so astonishing

31688 to 31697—Continued

31697—Continued.

that the Chinese say that a man selling sliced *Ching lobas* near a boarding house ruins the boarding-house keeper. People doing much manual labor especially seem to be benefited by the use of them.

"As these roots stand long transportation very well, they will be useful in supplying mining camps and sailors with the necessary fresh vegetables. From the nature of the plants they will thrive especially well in the western United States. Seeds formerly sent under Nos. 17932, 17935 to 17937, 21623, 23968, and 23969." (*Meyer.*)

31698. MELILOTUS ALBA Desr. **Sweet clover.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received August 22, 1911.

"This clover grows 2 meters [6½ ft.] or more high. It has small white flowers and tiny reniform fruits. The general aspect is much like *Medicago sativa*, but the flowers are white and much smaller, fruits quite different. It is perennial, grows on the very worst soil, consisting of gravel, and looks quite fresh and green amidst its withered surroundings (no rain for last seven months). It seems to me that this might prove of interest to the specialists looking for forage plants for arid regions." (*Proschowsky.*)

31699 to 31701.

From China. Presented by Mr. N. Gist Gee, Soochow University, Soochow, China. Received July 31, 1911.

31699. LITCHI CHINENSIS Sonner. **Lychee.**

See Nos. 10670 to 10673, 14888, and 16237 to 16243 for descriptions.

Seeds.

31700. ERIOBOTRYA JAPONICA (Thunb.) Lindl. **Loquat.**

"*Bilo.*"

Seeds.

31701. ZINZIBER OFFICINALE Rosc. **Ginger.**

Roots.

31702. SOLANUM NIGRUM L. **Nightshade.**

From Nice, France. Presented by Dr. A. Robertson Proschowsky. Received August 16, 1911.

Variety *miniatura*.

31703. MEDICAGO FALCATA L. (?)

From Gilgit, Kashmir, British India. Presented by Mr. F. Booth Tucker, Salvation Army, Simla, British India. Received August 8, 1911.

31704 to 31707.

From Manila, Philippine Islands. Presented by Mr. P. J. Wester, horticulturist, Bureau of Agriculture. Received August 21, 1911.

Seeds of the following; quoted notes by Mr. Wester:

31704. TRICHOSANTHES QUINQUANGULATA A. Gray.

"A cucurbitaceous vine of vigorous growth indigenous to the Philippines. The fruit is globose and somewhat larger than an apple, the surface being a brilliant red. As the fruit keeps for many weeks after maturity, retaining its color, I believe that it might be used to great advantage for decorative purposes."

31704 to 31707—Continued.

31705. TRICHOSANTHES sp.

"This species grows on a vine similar to the preceding, but the fruit is smaller and straw colored."

31706. (Undetermined.)

"An herbaceous, ornamental shrub with large leaves and vermilion-colored flowers produced in a terminal panicle, the bright-colored calyces being persistent for several weeks after the corollas have dropped."

31707. TERMINALIA EDULIS Blanco.

"A large forest tree with an open head, producing an edible, subacid fruit about the size of a small plum. If, as is probable, the tree succeeds in south Florida, it will be a valuable addition to your ornamental shade trees there and the fruit can probably be utilized in making jelly and other preserves."

31708. PRUNUS TRIFLORA Roxb. **Plum.**

From China. Presented by Mr. N. Gist Gee, Soochow University, Soochow, China. Received August 22, 1911.

"These seeds were obtained from fruits about an inch in diameter and blood red and were rather full of fibers." (*Gist Gee.*)

31709 to 31714.

From Ceylon. Presented by Mrs. Charles B. Bigelow, Boston, Mass., through Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Mass. Received August 3, 1911.

Seeds of the following:

31709. FERONIA ELEPHANTUM Correa. **Wood-apple.**

See No. 25888 for description.

31710. ANNONA MURICATA L. **Soursop.**

See No. 18737 for previous introduction.

Distribution.—Native and cultivated in tropical America, and introduced into other tropical countries.

31711. ANNONA CHERIMOLA Miller. **Cherimoya.**

31712. ANNONA SQUAMOSA L. **Sweetsop.**

31713. CHRYSOPHYLLUM CAINITO L. **Star-apple.**

See No. 27572 for description.

31714. CARICA PAPAYA L. **Papaya.**

31715 to 31719.

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911.

Seeds of the following; quoted notes by Mr. Piper:

31715. SYNTHERISMA CILIARIS (Retz.) Schrad. **Crab-grass.**

"From Lamao, June, 1911. A larger species than our common American crab-grass."

31716. DOLICHOS LABLAB L. **Bonavist bean.**

"Cultivated for a vegetable. Native name *Bataoc*. Grown at Lamao Experiment Station."

31717. ERIOCHLOA RAMOSA (Retz.) Kuntze.

"From Manila, June, 1911."

31715 to 31719—Continued.

31718. PHASEOLUS sp.

"From Manila, June, 1911. Distributed by Mr. Merrill of the Manila Experiment Station as *Phaseolus calcaratus*, which it resembles in so far as it has yellow flowers and spurred wings, but the pods and seeds are very different."

31719. URARIA LAGOPODIOIDES (L.) Desv.

"A perennial legume with spreading stems 1 to 2 feet long. Readily eaten by cattle and producing abundant seed."

Distribution.—Southeastern Asia from India to China and through the Malay Archipelago and Polynesia to Australia.

31720. NORMANBYA MUELLERI Becc. **Palm.**

From Manila, Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911.

"*Bonga de China.* A palm cultivated throughout the Philippine Islands, but its origin is unknown. It much resembles the betel-nut palm but has glaucous leaves and smaller, bright-crimson fruits about an inch long." (*Piper.*)

Distribution.—A palm found in the valley of the Daintree River in the province of Queensland, Australia, and cultivated in the Philippines.

31721 to 31723. CUCUMIS MELO L. **Muskmelon.**

From Comendador, Dominican Republic. Presented by Mr. M. E. Beall. Received August 24, 1911.

Seeds of the following; quoted notes by Mr. Beall:

31721. "This melon measured 31 centimeters [1 ft.] from stem to blossom end and 46 centimeters [14 in.] around the middle. Flesh green, firm but tender, of delicious flavor. I never tasted a better one. It does not need to be improved, and if it produces in the United States, the Rocky Ford will have to take a back seat."

31722. "This melon weighed 15 pounds, measured 23.6 inches from stem to blossom end, and 23.2 inches around the middle. Flesh thick, salmon colored, of good flavor. I am told that there are larger ones of this variety, but I have not seen them."

31723. "Small muskmelon or canteloupe, a little larger than a Rocky Ford. Skin not very firm, flesh greenish, not particularly fine flavored. Might be of value for hybridizing work."

31725. PISTACIA INTEGERRIMA Stewart. **Zebra wood.**

From Lahore, India. Procured by Mr. R. S. Woglum, of the Bureau of Entomology, United States Department of Agriculture, from Mr. W. R. Mustoe, Superintendent of the Botanical Gardens. Received August 24, 1911.

"These seeds were taken from a splendid specimen of a tree in the Agri-Horticultural Gardens." (*Woglum.*)

See No. 18637 for description.

Distribution.—On the mountain slopes in the northwestern part of India at an elevation of 1,200 to 8,000 feet; cultivated in the plains.

31726. CITRUS AURANTIUM SINENSIS L. **Orange.**

From Bahia, Brazil. Presented by Mr. Southard P. Warner, American consul. Received August 25, 1911.

Bahia navel. See Nos. 24311 and 30201 for previous introductions.

31727. VOANDZEIA SUBTERRANEA (L.) Thouars. **Woandsu.**

From Portuguese East Africa. Presented by Mr. R. H. B. Dickinson, Department of Agriculture, Salisbury, Southern Rhodesia. Received August 14, 1911.

See No. 23453 for description.

31728 to 31735.

From China. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 21, 1911.

Seeds of the following; quoted notes by Mr. Piper:

31728. PHASEOLUS CALCARATUS Roxb.

"From the market in Canton, said to be grown in the neighborhood."

31729. DOLICHOS LABLAB L. **Bonavist bean.**

"From the market in Canton, said to be grown about Tientsin."

31730 and 31731. CLAUCENA LANSIUM (Lour.) Skeels. **Wampee.**

"Both of these varieties were purchased in the market at Canton, where they occur in great abundance at this season (July). The former is an acid variety, the fruit as large as a muscat grape, but tapering to the apex. The latter is sweet, a little smaller, and perfectly ellipsoid. Both are greenish yellow in color and normally contain five (?) seeds, but the sour one rarely has more than one seed. The fruit is only of mediocre quality, but the Chinese eat large quantities of it."

See Nos. 25546 and 27954 for previous introductions.

31732. MANGIFERA INDICA L. **Mango.**

"*Hamow*. From Canton. Said to be the best mango grown in South China. Fruit a rich apricot color, without blemish, about 2½ inches long, 2 inches broad, and 1½ inches thick; snout short, blunt; flesh apricot color, watery, and with little flavor, not at all turpentiny; skin thin, not peeling easily; not much fiber; stone large. A very attractive fruit, but in quality not to be compared with Manila mangos."

31733. PRUNUS SIMONII Carr.

"Common in the markets of Canton and Hongkong. Fruit subglobose, greenish; flesh red. Very good when stewed."

31734. PRUNUS TRIFLORA Roxb.

"Like the preceeding but smaller and quite red on the surface."

31735. RUBUS sp.

"An ornamental variety with grapelike leaves, rusty tomentose beneath. Fruit red, small."

31736. CAJUPUTI LEUCADENDRA (Stickman) Rusby. **Cajuput tree.**

See No. 30761 for explanation of the necessity for using the generic name Cajuputi.

From Sydney, New South Wales, Australia. Presented by Mr. J. H. Maiden, director, Botanic Gardens. Received August 29, 1911.

"This is a myrtaceous tree closely related to the eucalyptus. Present indications are that the tree will prove very valuable for avenue planting and windbreaks in southern Florida. It is a rapid grower and adapts itself readily to different conditions of soil and surroundings. It is able to withstand the effects of salt spray and is not

hurt by occasional tidal overflows. Trees set out as small seedlings in 1909 at Cocoanut Grove, Fla., have bloomed and produced this season (1911) after reaching a height of about 15 to 20 feet." (*H. F. Schultz.*)

Distribution.—From India southeastward through the Malay Archipelago to Australia.

31737. ZIZIPHUS JUJUBA Miller. **Jujube.**

From Chugutchak, Mongolia. Received through Mr. Frank N. Meyer, agricultural explorer, August 18, 1911.

"(May 4, 1911.) Very large Chinese jujubes, several varieties mixed. Said to come from Honan Province, north-central China." (*Meyer.*)

31738. ACANTHOSICYOS HORRIDA Welw. **Narras.**

From Windhoek, German Southwest Africa. Presented by the German Government. Received July 26, 1911.

See No. 31401 for description.

31739. CASTILLA sp. (?) **Central American rubber.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional, September 1, 1911.

Seeds.

31740. CITRUS AURANTIUM SINENSIS L. **Orange.**

From Avery Island, La. Presented by Mr. E. A. McIlhenny, at the request of Mr. C. W. Ward. Received September 5, 1911.

"Bud wood from a seminavel orange. This orange is the size of the Washington Navel, has a very thin skin and two or three seeds, but is decidedly similar in shape and outward appearance to the Washington Navel." (*McIlhenny.*)

31741 to 31747.

From Chile. Presented by Mr. Andrew Kerr, American consular agent, Coquimbo, Chile. Received January 5, 1911. Numbered September 5, 1911.

Plants of the following:

31741. EUGENIA LUMA (Mol.) Berg.

"*Meli.*"

Distribution.—A tree found in Chile from the vicinity of Concepcion southward to the island of Chiloe.

31742. EUGENIA sp.

"*Arrayan.*"

31743. CALDCLUVIA PANICULATA (Cav.) Don.

"*Tiaca.*"

31744. PHILESIA MAGELLANICA Gmelin.

"*Coi Copihue.*"

Distribution.—The coast of South America from Chile to the Straits of Magellan.

31745 to **31747.** (Undetermined.)

31745. "*Boqui.*"

31746. "*Chin-Chin.*"

31747. "*Tepú.*"

31748. EUCLEA RACEMOSA Murray.

From Cape Town, South Africa. Presented by Mr. T. F. Dreyer, assistant entomologist, Department of Agriculture, Cape of Good Hope. Received September 5, 1911.

See No. 9620 for description.

Distribution.—The southern and western districts of South Africa.

31751. ANACARDIUM OCCIDENTALE L. **Cashew.**

From Inhamban, Portuguese East Africa. Presented by Mr. P. W. Keys, superintendent, Limpopo District Methodist Episcopal Mission. Received September 6, 1911.

31753 and 31754.

From Kew, England. Procured from the Herbaceous Garden at Kew by Prof. William R. Lazenby, Ohio State University, Columbus, Ohio. Received August 31, 1911.

Seeds of the following; quoted notes by Prof. Lazenby:

31753. PHYSALIS IXOCARPA Brot.

"This is the most promising Physalis I have seen."

31754. SOLANUM NIGRUM L. **Nightshade.**

"Variety *douglasii*. This looks much like what we have grown in Ohio under the name 'garden huckleberry.' "

31755. PRUNUS ARMENIACA L. **Apricot.**

From Merv, Russian Turkestan. Presented by Mr. W. W. Mackie, director, Yaqui Valley Experiment Station, Esperanza, Sonora, Mexico, who secured them in May, 1911. Received September 7, 1911.

Arak.

Seeds.

31758. COFFEA DEWEVREI Wildem. and Dur. **Coffee.**

From the Kongo. Presented by the Minister for the Colonies, Brussels, Belgium, at the request of Mr. Émile de Wildeman, conservator, Botanical Gardens, Brussels. Received September 8, 1911.

Distribution.—A tall tree found in the Kongo region of western Africa.

31759. MANGIFERA INDICA L. **Mango.**

From Sibpur, Calcutta, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden. Received September 8, 1911.

Baramasee (?).

31760. MANGIFERA INDICA L. **Mango.**

From St. George, Grenada, British West Indies. Purchased from Mr. Gilbert Auchinleck, Superintendent of Agriculture, Grenada Agricultural Department. Received September 11, 1911.

"*Grenada Ceylon No. 1.*"

Plant.

31761. BAMBOS ARUNDINACEA Retz. **Bamboo.**

From Lansdowne, United Provinces, India. Procured from the Lansdowne Forest Division Office by Mr. W. R. Mustoe, superintendent, Botanic Gardens, Lahore, India, and presented by him through Mr. R. S. Woglum, of the Bureau of Entomology, United States Department of Agriculture. Received August 24, 1911.

Introduced for the work of this office in the trial of suitable bamboos for cultivation as an important timber supply in the Southern States.

31763. MANGIFERA INDICA L. **Mango.**

From Darbhanga, India. Presented by Maj. A. T. Gage, superintendent, Royal Botanic Garden, Sibpur, Calcutta, India. Received August 23, 1911. Numbered September 13, 1911.

Baboony.

Plants.

31764 and 31765. HORDEUM spp. **Barley.**

From the hills in the Simla district of the Punjab, India. Presented by Mr. Bernard Coventry, Officiating Inspector General of Agriculture in India, Pusa. Received September 13, 1911.

Seeds of the following; quoted notes received with seed:

31764. HORDEUM sp. **Awnless barley.**

"*Kharsila.*"

31765. HORDEUM sp. **Hooded barley.**

"*Haua.*"

"The origin of these varieties is not known. The crop is used both as human and animal food. There are no special methods of cultivation of this crop, and the usual methods obtaining in the hills for the cultivation of winter cereals is followed. Briefly, these consist in thoroughly preparing the soil in the monsoon by repeated ploughings and harrowings. A light dressing of cattle manure or house sweepings, if available, is given in August and the seed is sown broadcast in October. Very little care is required after sowing, except irrigation if possible, and the crop matures in five and one-half to six months. The average outturn of barley is 1,200 pounds per acre."

31766. LEUCAENA GLAUCA (L.) Benth.

From Brazil. Presented by Mr. Clinton D. Smith, Escola Agricola Practica "Luiz de Queiro," Piracicaba, Brazil. Received April 5, 1911. Numbered September 15, 1911.

See Nos. 755, 8998, and 23340 for previous introductions.

31767. INTSIA sp.

From Lawang, Java. Presented by Mr. M. Buysman. Received August 18, 1910. Numbered September 15, 1911.

Seeds.

31768. DAHLIA sp.

From Brazil. Presented by Mr. E. G. Swain, Diamantino, Brazil. Received July 24, 1911. Numbered September 15, 1911.

"A mixed-colored dahlia, red and white flowers, imported from Portugal." (*Swain.*)

31769 and 31770.

From China. Presented by Mr. T. M. Wilkinson, Foochow, China. Received July 5, 1911. Numbered September 15, 1911.

Seeds of the following; quoted notes by Mr. Wilkinson:

31769. Quercus sp. **Oak.**

31770. Eriobotrya japonica (Thunb.) Lindl. **Loquat.**

"*Beba.* This fruit tree begins to bloom the last of November and during the month of December. It has been in fruit for the last three weeks (May 16, 1911). The leaf is about 6 inches long and an inch or an inch and a half wide, has numerous ribs, and is dark green in color. The tree is inclined to grow straight and tall, the branches coming out of the main trunk at regular intervals and three, five, or seven of them at a time."

31771. (Undetermined.)

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August, 1911. Numbered September 15, 1911.

Seeds.

31772. Bromelia sp. **Bromelia.**

From Chile. Presented by Mr. José D. Husbands, Limavida, via Molina, Chile. Received August 14, 1911. Numbered September 15, 1911.

"From Coquimbo. This looks like a new class of *chupones* (Bromelia). These plants will probably be found to have some ornamental or economic value." (*Husbands.*)

Seeds.

31773. Geonoma sp. **Palm.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé, Museo Nacional. Received September 14, 1911.

This is probably the same species as No. 31930, but may be distinct.

Seeds.

31774. Solanum nigrum L. **Nightshade.**

From Kew, England. Presented by Dr. David Prain, director, Royal Botanic Gardens. Received September 14, 1911.

Introduced for breeding experiments.

Seeds.

31775. Citrullus vulgaris Schrad. **Watermelon.**

From Changchu, near Soochow, China. Presented by Mr. N. Gist Gee, Soochow, China. Received September 14, 1911.

"*Mo Ling Quo* (horse-bell melon). Best grown at Changchu." (*Gee.*)

31776. Caryophyllus aromaticus L. **Clove.**

From Port of Spain, Trinidad, British West Indies. Presented by the director, Botanical Department, Department of Agriculture. Received September 19, 1911.

See No. 27680 for description.

Seeds.

31779. POPULUS HETEROPHYLLA L. **Poplar.**

From Worcester County, Md. Collected 5 miles northeast of Pocomoke, by Mr. Ivar Tidestrom, of this Department, September 18, 1911. Received September 20, 1911.

"Native of eastern North America. Grows to a height of 30 feet or more, with a straight trunk." (*Tidestrom.*)

31780 to 31832.

Received through Mr. Frank N. Meyer, agricultural explorer, September 11, 1911. Seeds of the following:

31780. TRITICUM AESTIVUM L. **Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1471a, November 23, 1910.) A very fine variety of red winter wheat called *Kizil boogdai.*

"The wheats of Khotan are celebrated in Chinese Turkestan for their excellence and for the fine taste they impart to the bread baked from them. All these wheats are raised under irrigation and very often on land that is quite saline." (*Meyer.*)

31781. TRITICUM AESTIVUM L. **Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1472a, November 24, 1910.) A good, hard, white, winter wheat called *Ak mecca boogdai.* Said to have been introduced from Mecca." (*Meyer.*)

31782. TRITICUM AESTIVUM L. **Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1473a, November 23, 1910.) A very fine quality of white, summer wheat called *Ak-boogdai.*" (*Meyer.*)

31783. TRITICUM AESTIVUM L. **Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1474a, November 23, 1910.) A large variety of red, summer wheat called *Kizil boogdai.*" (*Meyer.*)

31784. TRITICUM AESTIVUM L. **Wheat.**

From the Oasis of Khotan, Chinese Turkestan.

"(No. 1475a, November 24, 1910.) A red, summer wheat called *Kizil boogdai.*" (*Meyer.*)

31785. TRITICUM AESTIVUM L. **Wheat.**

From San Kia, Chinese Turkestan.

"(No. 1476a, November 17, 1910.) A fine quality of summer wheat grown on light, sandy soil." (*Meyer.*)

31786. TRITICUM AESTIVUM L. **Wheat.**

From Pi-yalma, Chinese Turkestan.

"(No. 1477a, November 18, 1910.) A fine quality of summer wheat grown like No. 1476a (S. P. I. No. 31785)." (*Meyer.*)

31787. TRITICUM AESTIVUM L. **Wheat.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1478a, December 4, 1910.) A good, white, summer wheat called *Andishan boogdai.* Said to have come originally from Andishan." (*Meyer.*)

31780 to 31832—Continued.

31788. TRITICUM AESTIVUM L. **Wheat.**

From Burya Lyang, Chinese Turkestan.

"(No. 1479a, December 8, 1910.) A red, summer wheat called *Kizil boogdai.*" (*Meyer.*)

31789. TRITICUM AESTIVUM L. **Wheat.**

From Karawag, Chinese Turkestan.

"(No. 1480a, December 10, 1910.) A rare local variety of white, summer wheat having very large grains, called *Ak-boogdai.*" (*Meyer.*)

31790. TRITICUM AESTIVUM L. **Wheat.**

From Karghalik, Chinese Turkestan.

"(No. 1481a, December 12, 1910.) A local variety of red, hard wheat called *Kizil boogdai.*" (*Meyer.*)

31791. TRITICUM AESTIVUM L. **Wheat.**

From Kashgar, Chinese Turkestan.

"(No. 1482a, October 23, 1910.) A good quality of Kashgar wheat called *Kizil boogdai.*

"All of these wheats, having been raised for centuries in an arid climate under irrigation, may thrive better in the hot southwestern parts of the United States than anywhere else; still they might also be given a trial in cooler arid and semiarid regions, but should not be tested in the humid eastern sections." (*Meyer.*)

31792. HORDEUM VULGARE L. **Barley.**

From Nusi, Chinese Turkestan.

"(No. 1483a, November 28, 1910.) A winter barley called *Chilgà arpa.* Able to withstand considerable drought and alkali." (*Meyer.*)

31793. HORDEUM sp. **Hull-less barley.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1484a, December 4, 1910.) Summer barley, grown on rather sandy land at an elevation of over 6,000 feet above sea level." (*Meyer.*)

31794. HORDEUM VULGARE HIMALAYENSE Rittig. **Hull-less barley.**

From Pushki, Chinese Turkestan.

"(No. 1485a, December 1, 1910.) A blue, hull-less, summer barley called *Kok-arpa.* Grown in a dry, cool region under irrigation." (*Meyer.*)

31795. HORDEUM sp. **Hull-less barley.**

From Pudskya, Chinese Turkestan.

"(No. 1486a, November 29, 1910.) A very fine variety of white, hull-less, summer barley called *Ak-arpa.* The flour made from this is used mixed with wheat flour for bread making. It is generally sown very early, as soon as the frost leaves the ground." (*Meyer.*)

31796. HORDEUM sp. **Hull-less barley.**

From Pustan Terek, Chinese Turkestan.

"(No. 1487a, December 29, 1910.) An excellent large variety of hull-less summer barley, grown by the Kirghiz in mountain valleys at altitudes from 6,000 to 7,000 feet. The flour of this barley mixed with wheat flour gives the little loaves baked from it remarkable nourishing and sustaining qualities. To be tested in the rocky and intermountain regions of the United States." (*Meyer.*)

31780 to 31832—Continued.

31797. CICER ARIETINUM L. **Chick-pea.**

From Khokan, Russian Turkestan.

"(No. 1489a, September 28, 1910.) A small variety of chick-pea called *Oh-nagh*, apparently one of the more primitive strains of garbanzos. Grown on the rather alkaline lands around Khokan. Eaten boiled in soups and meat stews." (*Meyer.*)

31798. CICER ARIETINUM L. **Chick-pea.**

From Khokan, Russian Turkestan.

"(No. 1490a, September 28, 1910.) A brown variety of chick-pea called *Kizil nagh*. Apparently a very primitive strain. Eaten like the preceding number, but retails at only half the price. May be tested as a forage crop on the alkaline lands of the warmer sections of the United States." (*Meyer.*)

31799. VIGNA SINENSIS (Torner) Savi. **Cowpea.**

From Khotan, Chinese Turkestan.

"(No. 1491a, November 26, 1910.) A rather small variety of cowpea grown for human food. To be tested under irrigation in the desert regions of the United States." (*Meyer.*)

31800. VIGNA SINENSIS (Torner) Savi. **Cowpea.**

From Karghalik, Chinese Turkestan.

"(No. 1492a, December 12, 1910.) A yellowish variety of cowpea called *Shou to*. To be tested like No. 1491a (S. P. I. No. 31799)." (*Meyer.*)

31801. VIGNA SINENSIS (Torner) Savi. **Cowpea.**

From Yarkand, Chinese Turkestan.

"(No. 1493a, December 18, 1910.) A rare local variety of cowpea, having brown mottled seeds. Eaten stewed with meats. To be tested like No. 1491a (S. P. I. No. 31799)." (*Meyer.*)

31802. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Karghalik, Chinese Turkestan.

"(No. 1494a, December 12, 1910.) A large, green variety of soy bean called *Ching tou*, used when slightly salted and roasted as an appetizer before meals. To be tested like No. 1491a (S. P. I. No. 31799)." (*Meyer.*)

31803. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Kashgar, Chinese Turkestan.

"(No. 1495a, October 23, 1910.) A black soy bean, used like No. 1494a (S. P. I. No. 31802), and also used to make bean curd. To be tried like No. 1491a (S. P. I. No. 31799)." (*Meyer.*)

31804. GLYCINE HISPIDA (Moench) Maxim. **Soy bean.**

From Karghalik, Chinese Turkestan.

"(No. 1496a, December 12, 1910.) A large, black soy bean called *Ghae tou*. Used like No. 1494a (S. P. I. No. 31802)." (*Meyer.*)

31805. PISUM SATIVUM L. **Pea.**

From San-Kia, Chinese Turkestan.

"(No. 1497a, November 17, 1910.) A small green pea called *Puchok*. Sown early on sandy lands, mostly between wheat. They are eaten boiled in soups and also ground and baked in bread. To be tested as a summer forage crop in the intermountain and Rocky Mountain regions or as a winter crop in moist, mild-winter sections of the United States." (*Meyer.*)

31780 to 31832—Continued.

31806. PISUM ARVENSE L. **Field pea.**

From Khotan, Chinese Turkestan.

"(No. 1498a, November 26, 1910.) Various varieties of peas mixed. Grown as an early crop on light, sandy, alkaline lands. See remarks under the preceding number." (*Meyer.*)

31807. PISUM ARVENSE L. **Field pea.**

From Pushki, Chinese Turkestan.

"(No. 1500a, December 1, 1910.) A small speckled pea called *Puchok.* Grown between wheat on sandy lands. See also remarks under No. 1497a (S. P. I. No. 31805)." (*Meyer.*)

31808. PISUM ARVENSE L. **Field pea.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1501a, December 4, 1910.) A small speckled pea sown on rather light soils between barley. See also remarks under No. 1497a (S. P. I. No. 31805)." (*Meyer.*)

31809. PISUM SATIVUM L. **Pea.**

From Pudskiya, Chinese Turkestan.

"(No. 1502a, November 29, 1910.) A pea called *Puchok,* sown on rather sandy and alkaline soils between wheat. See remarks under No. 1497a (S. P. I. No. 31805)." (*Meyer.*)

31810. LATHYRUS SATIVUS L.

From Pudskiya, Chinese Turkestan.

"(No. 1503a, November 29, 1910.) A legume called *Kara puchok,* meaning black pea, sown on light, alkaline soils between wheat. The seeds are eaten as food, boiled in soups or ground and mixed with wheat flour and baked into little loaves. I asked especially about the supposed poisonous effects of this legume, but the natives said they never heard of it. To be tested like No. 1497a (S. P. I. No. 31805)." (*Meyer.*)

31811. MEDICAGO SATIVA L. **Alfalfa.**

From Khotan, Chinese Turkestan.

"(No. 1504a, November 24, 1910.) A variety of alfalfa called *Chilga beda,* meaning fibery lucern. This variety seems to need less irrigation than the following number. A tall grower; stems erect, slightly woody; leaves rather small; good for hay." (*Meyer.*)

31812. MEDICAGO SATIVA L. **Alfalfa.**

From Khotan, Chinese Turkestan.

"(No. 1505a, November 24, 1910.) A variety of alfalfa called *Kara beda,* meaning black lucern. Leaves large, dark green; stems succulent, not very high growing. Not as good for hay as the preceding number; however, it supplies green fodder until frost, while the *Chilga* variety stops growing at the end of summer. It is not able to stand as severe cold as the *Chilga.*" (*Meyer.*)

31813. MEDICAGO SATIVA L. **Alfalfa.**

From Kashgar, Chinese Turkestan.

"(No. 1506a, January 14, 1911.) An alfalfa called *Kara beda.* In Kashgar this is considered the better of two varieties. It is apparently the same as the *Chilga beda* from Khotan." (*Meyer.*)

31780 to 31832—Continued.

31814. MEDICAGO SATIVA L. **Alfalfa.**

From Kashgar, Chinese Turkestan.

"(No. 1507a, January 14, 1911.) An alfalfa called *No beda*, meaning hollow lucern, on account of the stems being succulent and hollow. Seems to be the same as the *Kara* from Khotan.

"As vegetable culture stands on a very low level in Chinese Turkestan and as early vegetables do not exist, both foreign residents and natives eat the young alfalfa sprouts prepared like spinach, which vegetable they are said to resemble very much in taste and looks." (*Meyer.*)

31815. MEDICAGO SATIVA L. **Alfalfa.**

From Khanaka, Oasis of Sandju, Chinese Turkestan, 6,000 feet altitude.

"(No. 1508a, December 4, 1910.) An alfalfa called *Chilga beda*, apparently the same as No. 1504a (S. P. I. No. 31811). This variety of alfalfa ripens seed here in small quantities only, while the *Kara beda*, No. 1505a (S. P. I. No. 31812), never ripens at all and seeds have to be imported from Guma, situated at 4,000 feet elevation above sea level. This number therefore may show unusually hardy qualities and ought to be tested in a dry, cold region." (*Meyer.*)

31816. CANNABIS SATIVA L. **Hemp.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1511a, December 4, 1910.) A small-seeded variety of hemp called *Kandivi*. The oil expressed from the seeds is used for culinary and illuminating purposes. The fiber is not generally utilized, except for some very inferior rope that here and there is made from it. From the young tops, however, the hashish is made, and many are the victims addicted to the smoking of this narcotic." (*Meyer.*)

31817. LINUM USITATISSIMUM L. **Flax.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1512a, December 4, 1911.) Native name *Sigger*. Flax is extensively cultivated in both Russian and Chinese Turkestan, not for its fiber, however, but solely for the oil the seeds yield. The oil is much used in the native cooking, while the Russian settlers in central Asia have also become used to it. This linseed oil when fresh is a very palatable oil and can be used with excellent results in the frying of fish, doughnuts, pancakes, etc.

"Flax for its oil-yielding capacities seems to be very promising as a crop for those sections of the United States where the summers are short and dry, especially the mountainous western part and in the outlying districts where settlers have to grow what they need as much as possible.

"Linseed oil is much easier digested than cottonseed oil and ought to be tested as human food." (*Meyer.*)

31818. LINUM USITATISSIMUM L. **Flax.**

From Tashmalah, Chinese Turkestan.

"(No. 1513a, December 23, 1910.) Variety *semina lutea*. A variety with light-yellow seeds. Used for the same purpose as No. 1512a (S. P. I. No. 31817). Native name *Sigger*." (*Meyer.*)

31819. ERUCA SATIVA Hill. **Roquette.**

From Khanaka, Oasis of Sandju, Chinese Turkestan.

"(No. 1514a, December 4, 1910.) Native name *Sa-un*. A variety of rape seed, the oil of which is used both for culinary and illuminating purposes. To be tested as a possible crop for the intermountain regions." (*Meyer.*)

31780 to 31832—Continued.

31820. ERUCA SATIVA Hill. **Roquette.**

From Karawag, Chinese Turkestan.

"(No. 1515a, December 10, 1910.) A variety slightly different from No. 1514a (S. P. I. No. 31819); also comes from a warmer locality. Native name *Sa-un*. The same remarks as made under No. 1514a (S. P. I. No. 31819) apply also to this one." (*Meyer.*)

31821. BRASSICA NAPUS L. **Mustard.**

From Khasan-dugra, Chinese Turkestan.

"(No. 1516a, December 7, 1910.) A mustard which is said to grow very tall. Likes a somewhat alkaline soil. An oil that is used to smear over bread in the baking process is expressed from the seeds. To be tested with care, as it may be of a weedy disposition." (*Meyer.*)

31822. ELAEAGNUS ANGUSTIFOLIA L. **Oleaster.**

From Upal, Chinese Turkestan.

"(No. 1546a, December 31, 1910.) The oleaster is mostly seen as a tall shrub, but in good situations it grows sometimes to be a fair-sized tree. All things considered, it is perhaps the most useful tree in Chinese Turkestan. When well kept it supplies excellent hedges, almost impenetrable to man and beast. From the branches stuck in the ground in slanting and zigzag fashion, very good temporary fences can be made. As a windbreak it is unexcelled, keeping the drying desert winds off the cultivated lands of the oasis. As a sand binder it is of great value, checking blowing and encroaching desert sands to a great extent; also where washouts are experienced, its masses of fibrous roots retain the soil to a great extent.

"In many oases its wood constitutes the chief fuel supply, and to furnish this firewood the trees are pollarded every four to six years without suffering. The wood, when dry, possesses fine heating qualities and makes a good bed of live coals which lasts the whole night when covered up with ashes.

"The fruits of the wild form are too small and too astringent to be of any value to man, but some of the cultivated forms supply a sweetmeat to children. The dry cast-off leaves are a favorite food of sheep, goats, donkeys, and cattle. The flowers possess a remarkably sweet odor and seem to be rich in honey.

"Its highly ornamental qualities combined with drought and alkali resistant capacities put it in the first class as a desirable garden and park shrub or tree in the more arid parts of the United States. Its silvery-gray foliage resembles the olive very much, while in autumn the contrast between it and the multitude of generally orange-red small fruits is gloriously beautiful.

"The habit of this oleaster is extremely variable, the majority of the trees drooping gracefully when becoming old; some, however, assume quite rigid outlines. The size of the fruit also varies considerably, ranging from that of a pea up to an ordinary date. The berries vary from pure white on some trees to dark brownish red on others. Even in the leaves there is considerable variation in size, nuances of grayish green, and the relative quantity a tree may possess.

"The roots are sometimes a mass of nodules and, as the trees often grow quite luxuriantly even in pure sand, they seem to derive nutrition from these tubercles and, perhaps, even fertilize the soil to some extent. One notices, for instance, that crops, though close up to a row of oleaster trees, are not impoverished to any extent. For this reason the natives of central Asia seem to prefer this tree to any other sort of windbreak. The plants are able to grow in pure

31780 to 31832—Continued.

31822—Continued.

sand or in alkaline soils, and while they can exist with very little water they do not grow luxuriantly. They can not stand low, water-logged soils.

"Their propagation is easy; cuttings from the size of a lead pencil up to poles 6 feet long and 2 to 3 inches thick all strike roots easily, as long as the soil is moist enough to give them a chance. In those regions of the United States where the summers are very hot and dry and the winters are not too cold, where the soils are sandy or alkaline but where irrigation water is occasionally supplied, the oleaster deserves the highest consideration as a hedge plant, as a fence material, as a windbreak, as a sand binder, as a fuel supplier, and as a characteristic ornamental tree around the home." (*Meyer.*)

31823. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1571a, December 19, 1910.) A Chinese variety of glutinous rice called *Lo mi.* Originally introduced from eastern China, now sparingly grown around Yarkand. It is considered a very fine variety and almost twice as expensive as other rices.

"This and the following varieties of rices should be tested in the western sections of the United States. They are all grown in standing water and the soil in which they thrive is generally well charged with alkali. Rice is a rather expensive food in Chinese Turkestan on account of the scarcity of water, which could be employed for other crops, but the people as a whole are so fond of it that they are willing to make many sacrifices for it. Several local varieties have been developed during the long period of human occupation, and some of the best are being offered here." (*Meyer.*)

31824. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1572a, December 19, 1910.) A variety of rice called *Khotan Dowsera.* The grains become large and very white when boiled, and this variety is considered very good." (*Meyer.*)

31825. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1573a, December 19, 1910.) A variety of rice called *Ak-zu;* has red beards. Said to be very white and plump when boiled." (*Meyer.*)

31826. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1574a, December 14, 1910.) A variety of rice called *Kara Kiltrick;* has black beards." (*Meyer.*)

31827. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1575a, December 19, 1910.) A variety of rice called *Yarkand Dowsera;* has white beards. It is considered the best variety locally, as it has about the same qualities as the *Khotan Dowsera* (No. 31824.)" (*Meyer.*)

31828. Oryza sativa L. **Rice.**

From Yarkand, Chinese Turkestan.

"(No. 1576a, December 19, 1910.) A variety of rice called *Sarich Kiltrick;* has yellow beards, but white seeds." (*Meyer.*)

31780 to 31832—Continued.

31829. Oryza sativa L. **Rice.**

From Kashgar, Chinese Turkestan.

"(No. 1577a, January 27, 1911.) A variety of rice called *Ak-uruk;* has large, white grains." (*Meyer.*)

31830. Oryza sativa L. **Rice.**

From Kashgar, Chinese Turkestan.

"(No. 1578a, January 27, 1911.) A variety of rice called *Chilga;* of light milling qualities. Considered locally a marvel, as it ripens in 10 weeks after being sown. It is grown as a second crop after the winter wheat has been harvested." (*Meyer.*)

31831. Oryza sativa L. **Rice.**

From Kashgar, Chinese Turkestan.

"(No. 1579a, January 27, 1911.) A variety of rice called *Kara Kiltrick.* It has white beards and is very different from the same variety of Yarkand (No. 31826)." (*Meyer.*)

31832. Oryza sativa L. **Rice.**

From Kashgar, Chinese Turkestan.

"(No. 1580a, February 1, 1911.) A variety of rice called *Tum-uruk.* Considered to be a very good sort. Early ripener. White and reddish grains are said to exist intermixed in this variety." (*Meyer.*)

31835 to 31864.

From the Natal Botanic Gardens, Durban, Natal, South Africa. Presented by Dr. J. Medley Wood, director, Natal Botanic Gardens. Received July 15, 1911.

Seeds of the following:

31835. Asparagus falcatus L. **Asparagus.**

An ornamental flowering climber with creamy-white sweet-scented flowers in large panicles.

Distribution.—In the island of Ceylon, and in tropical and southern Africa, extending from Nubia and Upper Guinea southward to the Cape.

31836. Bauhinia picta (H. B. K.) DC.

See No. 21783 for description.

31837. Boscia undulata Thunb.

See No. 28719 for previous introduction.

31838. Brunsfelsia americana L.

See No. 28720 for previous introduction.

31839. Calpurnia aurea (Lam.) Benth.

See No. 28721 for previous introduction.

31840 and 31841. Carissa spp.

Introduced in order to extend the cultivation of these important home-garden fruits for the Southern States.

31840. Carissa bispinosa (L.) Desf.

Distribution.—Central southern Africa, extending from Rhodesia and the Mozambique district southward to the Cape.

31841. Carissa grandiflora (Mey.) DC. **Amatungulu.**

31835 to 31864—Continued.

31842. CHRYSOPHYLLUM VIRIDIFOLIUM Wood and Franks.

Distribution.—A tree found in the woods in the vicinity of Durban in Natal, Africa.

31843. CRACCA GRANDIFLORA (Ait.) Kuntze.

Distribution.—A leguminous shrub with red flowers found along the eastern coast of South Africa from Durban to Uitenhage.

31844. CROTALARIA GRANTIANA Harvey.

Distribution.—A small, slender, leguminous plant found in the vicinity of Durban in South Africa.

31845. CRYPTOCARYA WOODII Engler.

Distribution.—In the woods in the vicinity of Durban, South Africa.

31846. DRACAENA RUMPHII (Hook.) Regel.

See No. 28724 for previous introduction.

31847. GLORIOSA SIMPLEX L.

Distribution.—Tropical and South Africa, extending from Upper Guinea and the Nile land southward to the Cape.

31848. INDIGOFERA sp.

31849. LITTONIA MODESTA Hook. f.

Distribution.—A tuberous-rooted climbing vine belonging to the family Melanthiaceæ, and growing in the Kalahari region and in the vicinity of Durban in South Africa.

31850. MILLETTIA GRANDIS (E. Meyer) Skeels.

(*Virgilia grandis* E. Meyer 1835, Commentariorum de Plantis Africae Australioris, vol. 1, p. 1.)

(*Millettia caffra* Benth. 1843, Journal of Botany, London, vol. 2, p. 99.)

This South African leguminous tree was first named *Virgilia grandis* by E. Meyer in 1835, and later was given the name *Millettia caffra* by Bentham, who apparently did not know of the earlier name. In accordance with present rules of botanical nomenclature the earliest specific name, *grandis*, is here restored.

Millettia grandis is found on the rocky slopes of the mountains in the vicinity of Durban in South Africa.

31851. MONDIA WHITEI (Hook. f.) Skeels.

"It may be interesting to note that the fishermen at Fajao use as a line a fiber obtained from a climbing asclepiad (evidently *Chlorocodon whitei* [now *Mondia whitei*]) which is common in bushland throughout Unyoro. It has great strength and durability, a line about the size of an ordinary thread holding a fish from 4 to 6 pounds in weight. The roots of the same plant are eaten by the natives as a tonic, and are of a pleasant taste." (*Dawe, Economic Resources of Uganda*, p. 32.)

See No. 28730 for previous introduction.

31852. MORAEA IRIDIOIDES L.

See Nos. 13732, 28727, and 31258 for previous introductions.

31853. OPHIOBOSTRYX VOLUBILIS (Harvey) Skeels.

See No. 28729 for previous introduction.

31835 to 31864—Continued.

31854. Ornithogalum saundersiae Baker.

Distribution.—A white-flowered bulbous perennial growing in damp places among rocks at an elevation of 3,000 to 3,400 feet in the Kalahari region of South Africa.

31855. Ornithogalum thyrsoides Jacq.

Distribution.—A bulbous plant with several varieties, having red, yellow, or white flowers, growing among the mountains along the eastern coast of Cape Colony.

31856. Oxyanthus pyriformis (Hochst.) Skeels.

(*Megacarpha pyriformis* Hochst. 1844, Flora, vol. 27, p. 551.)

(*Oxyanthus natalensis* Sond. 1850, Linnaea, vol. 23, p. 50.)

The seeds of this South African rubiaceous shrub were received under the name *Oxyanthus natalensis*, a name given to the plant by Sonder, who transferred the species from the genus *Megacarpha* to which it was first assigned by Hochstetter in 1844. In transferring the species Sonder displaced the original specific name, *pyriformis*, which is here restored, in accordance with present rules of botanical nomenclature.

Oxyanthus pyriformis is known to occur only in the damp woods in the vicinity of Durban, South Africa.

31857. Pallasia capensis Christm.

(*Calodendrum capense* Salberg 1782, in Thunberg, Nova Genera Plantarum, p. 43.)

The seeds of this large, evergreen South African tree, belonging to the family Rutaceæ, were received under the name *Calodendron capense*. The generic name Calodendrum was published by Salberg in 1782. However, in 1778, Christman (Houttyn, Pflanzensystem, vol. 3, p. 318, pl. 22) had published for the same plant the name *Pallasia capensis*. The name Pallasia was first used in 1777 by Scopoli (Introductio, p. 72) for a grass which had been described and figured in 1770 by Pallas (Reise durch verschiedene Provinzen des russischen Reichs, vol. 2, p. 733, pls. K., fig. 1, and Q., fig. 2), but to which no binomial name was given.

Scopoli also wrote "an hoc *Phleum Schoenoides* Linn.?", but this is not the species described, nor the one described and figured by Pallas. Scopoli, therefore, did not technically publish the generic name Pallasia, as he did not use a binomial name and did not refer to any description which is associable with a previously published binomial species. It is therefore necessary to use the name Pallasia for the genus generally called Calodendron.

Pallasia capensis, called "wild chestnut" by the colonists, is found in the woods along the eastern coast of South Africa from the vicinity of Durban southward to the Cape.

31858. Psychotria capensis (Eckl.) Vatke.

Distribution.—An evergreen shrub or small tree found in the woods in the vicinity of Durban in South Africa.

31859. Sphedamnocarpus pruriens (Juss.) Szyszylowics.

Distribution.—A shrubby vine growing in the woods in the Transvaal region of South Africa.

31835 to 31864—Continued.

31860. STRELITZIA ALBA (L. f.) Skeels.

(*Heliconia alba* L. f. 1781, Supplementum Plantarum, p. 157.)

(*Strelitzia augusta* Travenfeldt 1792, in Thunb., Nova Genera Plantarum, p. 113.)

This beautiful white-flowered plant belonging to the family Musaceæ was firs named in 1781 by Linnæus's son as a species of Heliconia, with the specific name *alba*. Travenfeldt, in 1792, transferred the species to the genus Strelitzia, where it is generally considered to belong, but gave it a new specific name, *augusta*. The binomial *Strelitzia alba*, although the proper name of this plant, according to recognized nomenclatural practice, appears never to have been used heretofore.

Strelitzia alba is a well-known South African plant, occurring from Durban to the Cape of Good Hope.

31861. STRYCHNOS DECUSSATA (Pappe) Gilg.

Distribution.—A tree, attaining a height of 25 feet, the knotted twigs of which are used as ceremonial wands by the Zulu-Kafirs, is found on the eastern coast of South Africa from Durban to Uitenhage.

31862. TECOMA BERTEROI DC.

See No. 28728 for previous introduction.

31863. TURRAEA HETEROPHYLLA Smith.

Distribution.—A gray-barked shrub found in the woods in the vicinity of Durban in South Africa.

31864. TURRAEA OBTUSIFOLIA Hochst.

Distribution.—A shrub with reddish bark, growing in the woods in the vicinity of Durban in South Africa.

31865. BOUEA GANDARIA Blume.

From Singapore, Straits Settlements. Presented by the Botanical Garden at Singapore through Mr. Lyster H. Dewey, of the Bureau of Plant Industry, who brought them with him to this country on his return from abroad. Received September 20, 1911.

See No. 29383 for previous introduction.

31866. CORNUS BRETSCHNEIDERI Henry.

From Rochester, N. Y. Presented by Mr. John Dunbar, Assistant Superintendent of Parks. Received September 15, 1911.

This is a very ornamental shrub from the mountains of western China, especially striking in the winter against a background of evergreens, because of its bright lemon-yellow twigs. It has proven thoroughly hardy as far north as Rochester, N. Y.

See No. 30288 for previous introduction.

31868. HORDEUM sp. Hull barley.

From Khanaka, Oasis of Sandju, Chinese Turkestan. Received through Mr. Frank N. Meyer, agricultural explorer, September 11, 1911.

This seed was picked out of No. 31793, a summer barley. See this number for remarks.

31869. ANNONA GLABRA L. **Alligator-apple.**

From Camaguey, Cuba. Presented by Mr. Robert L. Luáces, agricultural engineer, at the suggestion of Mr. G. P. Wilder, Honolulu, Hawaii. Received September 21, 1911.

See No. 26855 for previous introduction.

31870. PHORMIUM TENAX Forst. **New Zealand flax.**

From Pasadena, Cal. Presented by Mr. P. D. Barnhart. Received September 7, 1911.

31871. NICOTIANA TABACUM L. **Tobacco.**

From Guatemala City, Guatemala. Presented by Mr. S. Billow. Received September 13, 1911.

"The tobacco that is principally used here is brought from Honduras. However, the other day I noted a tobacco plant growing very luxuriantly in one of the parks and plucked some of the seed, which I am sending. I do not know anything about the variety, but the stalk did not show any signs of disease or attack by insects." (*Billow.*)

31872 to 31876.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received September 23, 1911.

Seeds of the following; quoted notes by Mr. Mead:

31872. ARISTOCLESIA ESCULENTA (Arruda) Stuntz. **Pacuri.**

(*Moronobea esculenta* Arruda 1810, Discurso Sobre a Utilidade da Instituiçao de Jardins nas Principaes Provincias do Brazil, p. 32; reprinted in Mello, Biographias de Joacquim Ignacio de Lima, etc., 1895.)

(*Platonia insignis* Mart. 1832, Nova Genera et Species Plantarum Braziliensium, vol. 3, p. 169, pls. 288, fig. 2, and 289.

The seeds of this Brazilian tree, which belongs to the family Clusiaceæ, were received under the name *Platonia insignis*, which was applied to it by Martius in 1832. In 1808, however, Rafinesque (Medical Repository, vol. 5, p. 352) had published the generic name Platonia, based on *Verbena nodiflora* L., thus preventing the use of the same name for the tree described by Martius. This fact was recognized in 1909 by Coville, who published the new generic name Aristoclesia (Century Dictionary Supplement, p. 75). Martius described but one species, *Platonia insignis*, and cited *Moronobea esculenta* Arruda, which identification was indorsed in 1896 by Britten (Journal of Botany, vol. 34, p. 248). The earlier specific name is here restored.

"In Guarany this is called *pacuri*. It is very highly recommended as a delicious fruit, either fresh or in preserves. The plant grows 2 meters [6½ ft.] high and the fruit, which is larger than a cherry and nearly black in color, is borne in clusters about the main stalk. Frost resistance equal to the orange. Seed procured near Caballero, Paraguay."

Distribution.—Aristoclesia esculenta is found in the aboriginal forests of the Amazon Valley in the provinces of Para, Maranhao, and Ceara in Brazil.

31873. PSIDIUM GUAJAVA L. **Guava.**

"A native of South America. Found growing wild in the mountains in Paraguay. Same description as for other guavas sent (No. 31359). This seed was selected from the largest and finest fruits only."

31874. GOSSYPIUM sp. **Cotton.**

31872 to 31876—Continued.

31875 and 31876. ARACHIS HYPOGAEA L. **Peanut.**

31875. Red.

"This is called in Guarany *mandui colorado*, in Spanish *mani colorado*. A main-crop variety, but inferior in yield and quality to the white variety. Habit of growth same as the Virginia Runner; nuts though similar to the Tennessee Red in quality are nearly as large as the white peanut."

31876. White.

"This is called in Guarany *mandui blanca*, in Spanish *mani blanca*. Reported as a variety developed by Indians in Chaco, Paraguay, but I have doubts as to the truth of this. This is the best of the peanuts found here for main crop. A strong plant. Habits of growth similar to the Virginia Bunch and a heavy cropper. Pods large and well filled; as many as five nuts in one pod are commonly found."

31877 to 31878.

From Australia. Presented by Mr. James Pink, Wellington Point, near Brisbane, Queensland. Received September 26, 1911.

Seeds of the following; quoted notes by Mr. Pink:

31877. CITRUS AUSTRALIS (Cunn.) Planch. **Australian sour orange.**

"These were collected on the range of hills whence is the source of the Brisbane River, where in winter they occasionally get 10 to 15 degrees of frost in the early morning, but appear to suffer no harm therefrom."

31878. GREVILLEA BANKSII R. Br.

"One of the most beautiful flowering shrubs of Australia."

Distribution.—In rocky places along the coast of the province of Queensland, Australia, from Broad Sound southward to the vicinity of Brisbane.

31879. ANDROPOGON SCHOENANTHUS L. Lemon grass.

From Suva, Fiji Islands. Presented by Mr. Charles H. Knowles, Superintendent of Agriculture, Department of Agriculture. Received September 25, 1911.

See No. 29456 for description.

31880. ANNONA MURICATA L. Soursop.

From Redland Bay, Queensland, Australia. Presented by Mr. James Collins. Received September 25, 1911.

Grafted plants.

31881. CITRUS sp. Orange.

From Paraguay. Presented by Mr. C. F. Mead, Villa Encarnacion. Received September 27, 1911.

"This is called *Naranja apepu*. Claimed by Paraguayans as the native wild orange, but is more likely a sport from *Citrus bigorada de grandes frutas*. The strongest growing and hardiest of all oranges here; seems to be affected by neither drought nor floods, heat or cold, and is free from all diseases common here. The fruit is large, neither sweet nor sour; skin very thick and free, used to some extent for oil and preserves. Tree grows to a height of 4 or 5 meters [13 or 16 ft.]. This seed came from a tree having a trunk 8 inches in diameter, which eight months ago was girdled 2 inches deep all around to kill it; fruit of this crop better than ever. This orange may be of use as a rootstock." (*Mead.*)

31882. MEIBOMIA sp.

From Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni, Estacion Agronomica. Received September 18, 1911.

"This is a native species of Paraguay, very good for forage and extraordinarily resistant to drought. It grows well in any soil, even in the driest and most sterile." (*Bertoni.*)

31883. VACCINIUM ANGUSTIFOLIUM Aiton. **Blueberry.**

From Cape Breton Island, Nova Scotia. Received through Mr. David Fairchild, of the Bureau of Plant Industry, September 28, 1911.

These plants were introduced for purposes of botanical study and breeding work.

Distribution.—Northeastern America; Hudson Bay region, Labrador, and Newfoundland, and southward to the alpine slopes of the White Mountains in New Hampshire.

31884 to 31890. PHORMIUM TENAX Forst. **New Zealand flax.**

From Wellington, New Zealand. Presented by Mr. T. W. Kirk, director, Department of Agriculture. Received September 26 and 27, 1911.

Plants of the following:

31884. *Tamatea.*
31885. Seedling (no name).
31886. *Tutaemanu.*
31887. *Parekawariki.*
31888. *Huhiroa.*
31889. *Ngutunui.*
31890. *Whareriki.*

31891. ANNONA PURPUREA Moc. and Sesse. **Cabeza de negro.**

From Mexico. Presented by Mr. C. B. Waite, City of Mexico, Mexico. Received September 29, 1911.

"This fruit is not a very valuable one in my estimation, although it is esteemed by the natives. It is fragrant, stringy, yellow, almost insipid, and will average in weight about 3 pounds. It has skin, turning brown when ripe, and ripens in August and September. The trees are about 10 to 15 feet high. The pulp of the fruit clings to the seed, like the mango, but does not seem to have the strings growing out of the seed as the mango, but out of a sheath around the seed. It is common from Cordoba to Guatemala." (*Waite.*)

31892. MEDICAGO SATIVA L. **Alfalfa.**

From Peking, China. Presented by Mr. B. Laufer. Received September 28, 1911.

31893 to 31895. HORDEUM spp. **Barley.**

From Komaba, Tokyo, Japan. Presented by Dr. Y. Kozai, director, Agricultural College, Tokyo Imperial University. Received September 27, 1911.

Seeds of the following:

31893. "*Bozu.* Ordinary variety."
31894. "*Isehadaka.* Naked variety."
31895. "*Kawai.* Naked variety and having awns on two rows of spikelets only."

31897. ERAGROSTIS ABYSSINICA (Jacq.) Schrad. **Teff.**

From the Transvaal, South Africa, at an elevation of 5,000 feet. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received September 30, 1911.

"This is one of my most valuable introductions into South Africa, and I am anxious that it should receive attention in the Southern and Southwestern States as a hay crop.

"Its great value lies in the rapidity of its growth and maturity (2 to 2½ months), and I have heard of a crop having been grown near Bloemfontein with only 4 inches of rain.

"Being sensitive to frost it is only suitable for regions of summer rainfall, which may partly account for the fact that it never 'took' among the farmers of California, where I introduced it many years ago." (*Davy.*)

31898 and 31899.

From South Africa. Presented by Prof. J. Burtt Davy, government agrostologist and botanist, Transvaal Department of Agriculture, Pretoria. Received September 30, 1911.

Seeds of the following:

31898. ACACIA KIRKII Oliver.

Distribution.—The highlands of the Batoka country in Lourenco Marques, on the east coast of Africa.

31899. CAILLIEA NUTANS (Pers.) Skeels.

(*Mimosa nutans* Pers. 1807, Synopsis Plantarum, vol. 2, p. 266.)

(*Cailliea dichrostachys* Guill. and Perr. 1830–1833, Florae Senegambiae Tentamen, vol. 1, p. 240.)

(*Dichrostachys nutans* Benth. 1842, The Journal of Botany, vol. 4, p. 353.)

The seeds of this South African leguminous shrub were received under the name *Dichrostachys nutans*. The generic name Dichrostachys was published in 1834 by Wight and Arnott (Prodromus Florae Peninsulae Indiae Orientalis, vol. 1, p. 271) with one species, *D. cinerea*, based on *Mimosa cinerea* L. In 1833, however, Guillemin, Perrottet, and Richard had published the genus Cailliea with one species, *C. dichrostachys*, based on *Mimosa nutans* Pers., which is considered to be congeneric with *Mimosa cinerea* L. In establishing the genus Cailliea the authors used for the specific name of their plant, *dichrostachys*, which had been used by De Candolle (Prodromus, vol. 2, 1825, p. 445) for a section of the genus Desmanthus but which was not published as a generic name until 1834. The earlier generic and specific names are both here restored.

Cailliea nutans is found on the west coast of Africa from Sierra Leone southward to Angola and on the east coast from Abyssinia southward to Mozambique.

"Both of these are shrubs or small trees and the pods are eaten by game and stock, much as is the case with the mesquite of the Southwest. The wood of *Dichrostachys nutans* (*Cailliea nutans*) is very hard and durable and is much valued in termite-infested regions for fence posts, in spite of its usually crooked habit of growth. It is known as *Sikkelbosch* or *Krul-peul*.

"Both bushes are native of the warm, dry middle veld below 4,000 feet and are usually found in sandy or gravelly soils in regions where the rainfall is from 20 to 25 inches, falling in summer." (*Davy.*)

31900 to 31902. HORDEUM spp. **Barley.**

From Nishigahara, Tokyo, Japan. Presented by Dr. Kozai, director, Agricultural College, Tokyo Imperial University. Received September 28, 1911.

Seeds of the following; quoted notes by Prof. Kozai:

31900. HORDEUM sp.

Saitama-Nishiki.

31901. HORDEUM INTERMEDIUM Koernicke.

Bodzu.

31902. HORDEUM sp.

Nakano-Wase.

"These varieties are cultivated in the western part of our country from olden times and, though their origin is unknown, it may be supposed that they are the result of natural hybridization."

31903 to 31907.

From Puerto Orotava, Teneriffe, Canary Islands. Presented by Dr. George V. Perez. Received September 25, 1911.

Seeds of the following; quoted notes by Dr. Perez:

31903. OCOTEA FOETENS (Soland.) Benth. and Hook.

"A laurel of our flora called *Til.* This is undoubtedly the sacred tree of the island of Hierro which used to condense the mountain mist into water and supply the inhabitants with drinking water. Should be grown in California in localities where mountain mists prevail."

31904 and 31905. CYTISUS spp.

"Two sorts of the famous mountain broom of Teneriffe, renowned for its beautiful flowers, which are an ideal food for bees. It grows between 7,000 and 9,000 feet and would do well in the mountains of southern California."

31904. CYTISUS CANARIENSIS RAMOSISSIMUS (Desf.) Briquet.

31905. CYTISUS SPACHIANUS (Webb) Kuntze.

31906 and 31907. CYTISUS SUPRANUBIUS (L. f.) Kuntze.

"Two very rare Teneriffe cytisi. Should be grown in California or Florida."

31908 to 31913. IPOMOEA BATATAS (L.) Poir. **Sweet potato.**

From Tauranga, New Zealand. Presented by Mr. W. C. Berridge, manager, Experimental Farm, Department of Agriculture, Commerce, and Tourists, Tauranga. Received September 29, 1911.

Tubers of the following; quoted notes by Mr. Berridge:

31908. *Red Waina.*

"This is like the Red Bermuda, or the variety I grew many years ago under that name. The name *Waina* is an attempt by the Maoris to pronounce vine, i. e., a sweet potato grown by sets or pieces of the vine."

31909. *White Waina.*

"Same as the preceding except in color."

31910. *Uti-uti.*

"Pronounced *Hooty-hooty.* This variety is grown from sections of the tuber cut in lengths of 1 to 2 inches. Planted on ridges it does not make much vine."

31908 to 31913—Continued.

31911. Red, from Japan.

"Looks somewhat like Red Jersey. I have not grown it yet, as the tubers were received recently."

31912. *Rekaumauroa* or *Tariana.*

"A dry sweet potato much liked by the Maoris. The meaning of the name is 'sweet forever'."

31913. *Taroamahoe.*

"This small sweet potato is liked by the Maoris, as it is dry and mealy, although small. Tradition says the natives brought it with them about 400 years ago when they first came to New Zealand from Hawaiki (Hawaii (?))."

31914 to 31923. DIOSCOREA spp. **Yam.**

From Port Moresby, New Guinea. Presented by Mr. J. A. Hamilton. Received July 31, 1911. Numbered September 30, 1911.

Tubers of each of the following:

31914. *Mordai.*

31915. *Keressa.*

31916. *Gorana.*

31917. *Sanai.*

31918. *Howtai.*

31919. *Sargo.* Reddish, very fair for table.

31920. *Walconco* (?).

31921. *Wanse* (?).

31922. *Hasalik* (?).

31923. This number was given to three tubers, from which the names had evidently been lost.

31925. (Undetermined.)

From Australia. Presented by Mr. B. Harrison, Burringbar, New South Wales. Received July 31, 1911. Numbered September 28, 1911.

"A native cherry." (*Harrison.*)

31927. ANDROPOGON SORGHUM (L.) Brot. **Sorgo.**

From San Jose, Costa Rica. Presented by Mr. Carlos Wercklé. Received May 2, 1911. Numbered September 30, 1911.

"This is a sorgo of the section which contains the Amber, Early Amber, Minnesota Amber, etc. From the appearance of the head I infer that it grew in a field seeded very thickly and that the heads are not at all normal in shape or size. I would suggest that it be grown for determination." (*Carleton R. Ball.*)

31928 to 31931.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received September 18, 1911. Numbered September 28, 1911.

31928. PERSEA PITTIERI Mez. **Avocado.**

See No. 32173 for later introduction of this species.

31929. ANNONA PURPUREA Moc. and Sesse.

Distribution.—Found in southern Mexico, in Panama, and Costa Rica.

31930. GEONOMA sp. **Palm.**

"A superb palm." (*Wercklé.*)

31931. COCCOLOBIS sp. (?)

"Seeds of a carrocaliente, but not the one from the Pacific coast. Is from the mountains. Is esteemed." (*Wercklé.*)

See No. 31636 for other species introduced.

31932. IPOMOEA MAMMOSA (Lour.) Choisy.

From Java. Presented by Mr. M. Buysman, Lawang, Java. Received September 18, 1911.

"This tuber is reported to be a very good medicine in casé of diabetes. It is cut in slices or scraped and the mass pressed in a linen sack with water. This water is drunk the entire day. I doubt if it is successful in all cases. The plant can be grown in the Southern States, Florida, and California." (*Buysman.*)

31933. MANIHOT ESCULENTA Crantz. **Cassava.**

From Paraguay. Received through Mr. C. F. Mead, Villa Encarnacion, September 14, 1911.

"Called in Guarany *mandio yeruti*, in Spanish *mantioca*. A sweet variety of cassava, which is dwarf in habit, attaining a height of only 2 meters [6½ ft.] This is of splendid quality for table use, but in no way out of the ordinary, except that the root crop is mature in five months. In Paraguay they plant canes of this variety in August and the root is ready by the end of December. Requires a light sandy loam, not too rich or the plant will run to canes. This variety is for table use, other varieties giving better results for stock crops, where a larger yield is important. From my experience I recommend *mantioca* highly as an excellent vegetable." (*Mead.*)

31934. ACHRAS sp.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose. Received August 14, 1911. Numbered September 28, 1911.

"A *sapotilla*. Large, very high quality; rose-colored flesh; four small seeds in each fruit." (*Wercklé.*)

31935. ZIZIPHUS sp.

From Costa Rica. Presented by Mr. Carlos Wercklé, San Jose, Costa Rica. Received August 14, 1911. Numbered September 28, 1911.

31936 to 31938. MANGIFERA INDICA L. **Mango.**

From Philippine Islands. Received through Mr. C. V. Piper, of the Bureau of Plant Industry, August 9, 1911. Numbered September 28, 1911.

Señora.

"These mango seeds were obtained by Mr. P. J. Wester, in Muntinlupa, Rizal Province. This mango is of very limited distribution, only a very few trees having come to our attention. The fruit is very much smaller than either the *Carabao* or *Pico*, and has more fiber and a larger seed in proportion to the flesh than either of these varieties. The quality is very good, but we do not believe that it has any possibilities as a commercial fruit." (*O. W. Barrett, chief, Division of Experiment Stations, Manila, P. I.*)

BOTANICAL NOTES AND PUBLICATION OF NEW NAMES.

31491. Agrostis sp.

31498. Calamagrostis youngii (Hook. f.) Skeels.

31501. Savastana fraseri (Hook. f.) Skeels.

31503. Poa australis R. Br.

31571. Syzygium cumini (L.) Skeels.

31639. Rhus verniciflua Stokes.

31736. Cajuputi leucadendra (Stickman) Rusby.

31850. Millettia grandis (E. Meyer) Skeels.

31856. Oxyanthus pyriformis (Hochst.) Skeels.

31857. Pallasia capensis Christm.

31860. Strelitzia alba (L. f.) Skeels.

31872. Aristoclesia esculenta (Arruda) Stuntz.

31899. Cailliea nutans (Pers.) Skeels.

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